

**School of Psychology and Speech Pathology**

**An Aetiological Model of Perfectionism**

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## **DECLARATION**

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: .....

Date: .....

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## **ABSTRACT**

Perfectionism has been identified as an important factor in the aetiology, course and maintenance of numerous psychological difficulties. The research to date has focused predominantly on examining the descriptive and maintaining factors of perfectionism, resulting in a paucity of research on the aetiology of the construct. A small amount of literature has identified parenting and personality factors as influential in the development of perfectionism, however these factors have been examined in isolation rather than in a multifactorial model. In prominent cognitive theories, parenting and personality factors are hypothesised to result in the development of particular cognitive schema, however this has not been tested in the construct of perfectionism. The aim of this study was to test a multifactorial, aetiological model of perfectionism that included parenting factors, personality factors and cognitive schema.

In Study One, an aetiological model was tested that assumed that parenting variables (Parental Bonding comprised of low Parental Care and high Parental Control, as well as high Parental Expectations and Criticism) were intercorrelated with the personality factor of high Neuroticism. These parenting and personality factors were hypothesised to lead to the development of particular cognitive schema (Emotional Deprivation, Abandonment, Mistrust/Abuse, Defectiveness and Social Isolation) that contribute to the development of perfectionism. The data was collected using a range of measures with a sample of 311 clients currently seeking psychological/psychiatric treatment predominantly in private practice. Structural equation modeling was used to examine the congruence between the data and the proposed aetiological model. Evidence was found in support of the model indicating a direct relationship between high Parental Expectations and Criticism and perfectionism. There was also an indirect relationship between Parental Bonding and perfectionism that was mediated by core schemas. Finally, it was found that Neuroticism had both an indirect relationship, which was mediated by core schemas, and a direct relationship with perfectionism. However, two of the relationships predicted in the model were not supported by the findings, in that there were no significant direct relationships between maternal and paternal Parental Bonding and perfectionism.

Study Two presented three explanatory case studies on the development of perfectionism. Client's perceptions of the salient factors in the development of their perfectionism were largely consistent with the aetiological model. However, clients emphasised the importance of parental modeling in the development of their perfectionism, rather than high Parental Expectations and Criticism, as would have been expected from the findings supporting the aetiological model in Study One. It is suggested that there might be two different cognitive pathways between parenting factors and perfectionism.

It is concluded that models of perfectionism need to take aetiological and maintenance mechanisms into consideration. Moreover, aetiological factors need to be included in psychological assessment, case formulation and treatment. Clinical implications are outlined to extend existing psychological interventions to include aetiological factors of perfectionism to assist clients at various stages of psychological therapy.

## **CHAPTER 1: LITERATURE REVIEW**

### **1.1 Introduction**

It is universally acknowledged that no individual is perfect, and therefore, perfection must in fact be unattainable by any individual. The impossibility of being perfect is understood when the construct is defined in the Macquarie dictionary (2009) as being “in a state of complete excellence; without blemish or defect; faultless” (p.724). Nevertheless, significant numbers of people tirelessly pursue perfection. This is an interesting phenomenon as in practice perfectionism often has a prohibitive and detrimental effect on the individual, particularly in regard to the adverse impact on an individual’s self worth when they can not attain the unattainable.

The reasons as to why people try to be perfect remain largely unknown, despite perfectionism being recognised as an important construct for over 20 years (Hill, McIntire, & Bacharach, 1997). It has been well identified in reviews of the literature that perfectionism plays an important role in the aetiology, development and maintenance of psychological disorders including depression, obsessive compulsive disorder (OCD), eating disorders, panic disorder and social phobia (Egan, Wade, & Shafran, in press; Shafran, Cooper, & Fairburn, 2002). Within the psychological literature, models of clinical disorders tend to cover both aetiological and maintenance factors. Aetiological models refer to a set of causes or pathways that contribute to the development of a psychological disorder or construct, whereas maintenance models refer to the factors that enable the construct to continue once formed. One of the most well known models to incorporate aetiological and maintaining mechanisms in case formulation is commonly referred to as the ‘PPP model’. The PPP model emphasises the importance of assessing predisposing, precipitating and perpetuating factors of psychological constructs (e.g., Hawton, Salkovskis, Kirk, & Clark, 1989). Predisposing/aetiological factors determine a person’s vulnerability to develop a particular psychological construct and often operate from early life, including biological factors and experiences in infancy and early childhood. Precipitating factors refer to the events that occur shortly before the onset of the psychological problem. Perpetuating/maintaining factors are thought to maintain and prolong the psychological problem. The importance of including the maintaining factors and a description of the interrelationships between these factors, as well as the aetiological/developmental factors is considered to be optimal when developing cognitive models of psychological disorders (e.g., Cooper, Wells, & Todd, 2004). Similarly, individual case conceptualisations also need to include presenting issues, triggers and maintenance factors and protective and predisposing issues in order to provide optimal assessment, case formulations and treatment (Kuyken, Padesky, & Dudley, 2009).

Research to date has focused predominantly on the descriptive and maintaining factors of perfectionism (Beiling, Summerfeldt, Israeli & Antony, 2004), which appears to have resulted in a limited knowledge base and a lack of integration regarding the aetiological factors of perfectionism. There has been a paucity of research into models of aetiology of perfectionism and there are no known models that have been empirically tested.

Understanding the aetiology of perfectionism may lead to a better understanding of the construct. This understanding can then assist in the development of preventive psychological interventions that target aetiological factors known to contribute to the development of perfectionism (Neumeister, 2004a). In addition, understanding aetiological factors can assist in the development of psychological treatments and interventions that target the underlying or predisposing issues. Knowledge of these underlying factors can assist with psychological assessment and the development of a formulation to assist clients to understand the development of their perfectionism. Furthermore, understanding aetiology can also inform the development of psychological treatments that target complex underlying factors of perfectionism (e.g., Beck, 1995; Young, 1999). These types of psychological interventions could be complementary to the existing treatments that target the maintaining factors of perfectionism.

This research program investigated the aetiological factors of perfectionism in order to provide a more comprehensive understanding of the construct and to attempt to identify aetiological reasons as to why so many people strive to attain perfectionism despite the adverse consequences. The first and central study aimed to draw together the main aetiological factors that have been purported to have an important influence on the development of perfectionism. An aetiological model of perfectionism based on these salient factors was then developed and empirically validated. The second study aimed to gather qualitative information to examine clients' perceptions as to which factors contributed to the development of their perfectionism. These responses were presented in the form of case studies to demonstrate the clinical utility of the aetiological model.

## **1.2 Definitions of Perfectionism**

Numerous attempts have been made to define the concept of perfectionism. The early anecdotal literature that focused on perfectionism provided descriptions of the various characteristics that described the construct. The first reference to perfectionism appears to have been provided by Pierre Janet (1898), who wrote that perfectionists had "idées fixes" (fixed ideas). However, Freud (1929/1959) is more commonly noted as the first psychoanalyst to write in detail about perfectionism. In classical psychoanalytic theory, Freud

viewed perfectionism as one of the familiar symptoms of obsessional neurosis. He stated that a person's harsh and punitive superego was responsible for making demands for superior conduct and achievement. Freud believed that when the ego, in obedience to the superego, identified a returning threat of oedipal impulses and conflicts, then a defensive regression to anal fixation of the ego occurs in the form of conscientiousness, cleanliness and pity (Sorotzkin, 2005). Adler (1926, 1956) also noted that striving for perfectionism was viewed as an innate and universal part of human responses to feelings of inadequacy and inferiority.

Horney (1950) later described perfectionism as 'the tyranny of the shoulds'. Horney stated that the need for perfection stems from striving towards moulding the whole personality into the idealised self. That is, for neurotic people, only absolute perfectionism is acceptable, and therefore perfection is attempted by forming a complex set of 'shoulds' and 'should nots'. When perfectionists inevitably fail to meet their idealised self-image, this in turn leads to low self-esteem. Horney stated that the neurotic, when striving towards their imaginary image of perfectionism, unconsciously says: "forget about the disgraceful creature you actually are; this is how you 'should be' (p. 64)". Overall, it appears that early writers with a psychoanalytic orientation predominantly viewed perfectionism as a response to feelings of low self-worth and inadequacy.

Cognitive-behavioural theorists have also focused on perfectionism and have continued to describe a relationship between perfectionism and contingent self-worth. Albert Ellis (1957) described perfectionists as people whose main purpose in all areas of life was success and achievement and who viewed any incompetence as an indication of being inadequate or valueless. Missildine (1963) also stated that low self-esteem and dissatisfaction with the self were key features of perfectionism. Missildine reported that perfectionists needed to be competent and achieving in all areas of their life to feel worthwhile. Hollender (1965, 1978) also described individuals with perfectionism as those who selectively attend to defects or flaws and engage in self-belittlement. Similarly, Hamachek (1978) observed that people with perfectionism worry endlessly about whether they are doing a task just right and their perception is that their efforts are never quite good enough.

Hamachek (1978), however, made a distinction between 'normal' and 'neurotic' perfectionists. He stated that 'normal perfectionists' interpret approval as an additional positive feeling (to their already existing feelings of self-approval) and use this as encouragement to continue to improve their work. Conversely, 'neurotic perfectionists' set goals that are usually unattainable and this severely limits the opportunities to feel satisfied at accomplishing tasks and further reduces the possibilities for feeling good about themselves and enhancing their self-esteem. Following on from Hamachek, several authors have noted a

potential curvilinear relationship between perfectionism and adaptive function. Stoeber and Otto (2006) provided a review of the empirical literature to distinguish between negative and positive forms of perfectionism. Stoeber and Otto defined healthy perfectionists as “individuals with high levels of perfectionistic strivings and low levels of perfectionistic concerns” (p.296). Stoeber and Otto concluded that the dimension of perfectionistic strivings that they examined was found to be associated with higher levels of achievement, conscientiousness, endurance, extraversion, active coping skills, and additionally with students, higher perceived ability and exam performance was found. However, as Burns (1980) stated, the pursuit of perfectionism has little clinical relevance when it is positive and functional, and therefore research has predominantly focused on the pathological form of perfectionism to inform clinical understanding and treatment

Burns (1980) further noted that people with perfectionism rigidly adhere to unrealistically high standards they have set for themselves, strain unremittingly and compulsively towards impossible standards and measure their own worth in terms of their accomplishments and productivity. Burns noted that the perfectionist is likely to respond to the perception of inadequacy or failure on a task with a precipitous loss in self-esteem, which can then trigger painful mood swings, including depression or anxiety. Burns stated that the perfectionist anticipates and fears rejection when they are judged to be imperfect by others, which in turn results in increasingly perfectionist behaviours, avoidance, or defensive reactions that can alienate and frustrate others and can bring about the very disapproval that is feared the most. In turn, this interaction reinforces the belief that to be accepted by others, they must be perfect.

More recently, research has viewed perfectionism as a multidimensional construct. This view is reflected in two of the most prominent questionnaires in the field, that were both named the Multidimensional Perfectionism Scale. The two questionnaires were developed by Frost, Marten, Lahart and Rosenblate (FMPS, 1990) and Hewitt and Flett (HMPS, 1991a). These measures are introduced briefly in this section as many of the following studies refer to these questionnaires. The FMPS and HMPS will be reviewed in more detail later in this chapter.

Frost and colleagues (1990) view perfectionism as a multidimensional construct, comprised of six dimensions, including Concern over Mistakes (CM), Doubts about Actions (DA), Personal Standards (PS), Parental Expectations (PE), Parental Criticisms (PC) and Organisation (O). Hewitt and Flett (1991a) similarly define perfectionism as a multidimensional construct; however, they assert that the construct is comprised of three dimensions, including self-oriented perfectionism (SOP), other-oriented perfectionism (OOP) and socially-prescribed perfectionism (SPP).

Although the definitions of perfectionism may vary, the theorists all appear to acknowledge that the construct has several similar facets including setting and striving to meet unrealistic and unattainable standards, a fear of making mistakes and a resulting decrease in perceived self worth when these standards are not achieved (e.g., Burns, 1980; Frost et al., 1990; Hamachek, 1978; Pacht, 1984). Thus, the following description of clinically relevant perfectionism will be used in this research as the overall definition of perfectionism: “the setting of excessively high personal standards of performance....which is accompanied by tendencies for overly critical evaluations of one’s own behaviour” (Frost et al., 1990; p. 449).

The term perfectionism is used in this research program as a way of indicating that the construct of interest is one of clinical relevance and to clearly distinguish the term from the types of perfectionism that are referred to as normal or positive achievement striving. It is noted that the more recently introduced definition of ‘clinical perfectionism’ proposed by Shafran et al. (2002) will not be adopted in the current research. The basis for its exclusion is that this definition is yet to be thoroughly examined (Steele, O’Shea, Murdock, Karney & Wade, in press) and has been challenged in the literature (e.g., Dunkley, Blankstein, Masheb, & Grilo, 2006; Hewitt, Flett, Besser, Sherry, & McGee, 2003). It is, however, important to continue the debate in the literature regarding the definition of clinical perfectionism, given that this term is a logical choice for examining the construct in clinical populations.

### **1.3 The Measurement of Perfectionism**

The measurement of perfectionism appears to have been the central focus of the research into this construct in recent decades. Interestingly, the majority of the research into perfectionism has focused on the development of questionnaire measures of the construct as distinct from developing theoretical models (Shafran & Mansell, 2001). The research focus on questionnaire development is perhaps atypical when compared to most other psychological constructs that have generally focused on developing and confirming theoretical models as a precursor to questionnaire development.

Approaches to the measurement of perfectionism have been based on the research that has attempted to define the construct. As most of the research has focused on the pathological form of the construct, the majority of instruments have been empirically tested with specific clinical populations experiencing high levels of perfectionism, such as eating disorders, depression and anxiety (e.g., Burns, 1980; Frost et al., 1990; Garner et al., 1983). The instruments have also reflected the change from research referring to perfectionism as a unidimensional construct (e.g., Burns, 1980) to reflect the more widely accepted notion that



perfectionism is a multidimensional construct (e.g., Frost et al. 1990; Hewitt & Flett, 1991a).

### **1.3.1 Unidimensional Measures of Perfectionism and the Limitations**

The unidimensional measures of perfectionism with acceptable psychometric properties that have relevance for clinical populations are described briefly in Table 1. As seen in Table 1 there have been relatively few studies that have provided evidence of the psychometric properties of each scale. This limited research shows that these measures have generally been found to range from low to satisfactory psychometric properties. This view is supported by Enns and Cox (2002), who in their extensive review of perfectionism measures, stated that the notable weaknesses of the unidimensional measures of perfectionism were that there have been few studies to provide evidence of the reliability and validity of the scale; the unidimensional nature of the construct and scales; and that few clinical studies had been conducted using the scales.

Perfectionism has been strongly associated with eating disorders and has been theorised to be a predisposing factor in their development (e.g., Bruch, 1978; Slade, 1982). In this regard there are three known instruments that incorporate a perfectionism subscale associated with the assessment of eating disorders, including (1) Eating Disorders Inventory (EDI; Garner et al., 1983), (2) the Neurotic Perfectionism Questionnaire (NPQ; Mitzman, Slade, & Dewey, 1994), and (3) the Setting Conditions for Anorexia Nervosa Scale (SCANS; Slade & Dewey, 1986). The most obvious limitation of these measures is that they are limited to individuals with an eating disorder and thus may have limited generalisability to other clinical populations. Additional limitations noted by Enns and Cox (2002) included the brevity of the six-item EDI-Perfectionism (EDI-P), which leads to doubt as to whether this subscale provides sufficient measurement scope of a construct as broad as perfectionism. In contrast, the length of the NPQ might be excessive when measuring a single aspect of perfectionism. Moreover, as most research has examined the psychometric properties of the EDI-P as part of the entire 64-item EDI, it has not yet been established whether the EDI-P can be used as a separate measure of the construct of perfectionism. In fact, Bardone-Cone, Wonderlich, Frost, Bulik, Mitchell, Uppala and Simonich (2007) stated, in their extensive review of the literature on eating disorders, that a two-factor model may provide the best fit for the EDI-P, with factors of SOP and family-pressured perfectionism (Joiner & Schmidt, 1995; Sherry, Hewitt, Besser, McGee, & Flett, 2004).

Additional research by independent studies is also required to establish the reliability and validity of the NPQ and the Perfectionism Cognitions Inventory (PCI; Flett, Hewitt, Blankstein, & Gray, 1998). In addition, relatively high inter item correlations of  $r = .49$  and  $r$

= .44 on the PCI were also reported in both studies by Flett and colleagues (1998; 2007), which may indicate a degree of redundancy for some of the items of the PCI (Enns & Cox, 2002).

The limitations of these unidimensional scales have precipitated a move towards multidimensional perfectionism scales, which provide a broader assessment of the construct.

Table 1

*Brief description and summary of psychometric properties of unidimensional measures of perfectionism*

Questionnaire	Burns Perfectionism Scale (BPS)	Eating Disorders Inventory (EDI)	Setting Conditions for Anorexia Nervosa Scales (SCANS)	Neurotic Perfectionism Questionnaire (NPQ)	Perfectionism Cognitions Inventory (PCI)	The Dysfunctional Attitudes Scale-Self Criticism (DAS-SC)
Publication	Burns (1980)	Garner et al. (1983)	Slade and Dewey (1986)	Mitzman et al. (1984)	Flett et al. (1998)	Weissman and Beck, 1978)
Brief description of Scale	The BPS is a 10-item scale derived from items from the Dysfunctional Attitudes Scale, which is a measure of self-defeating cognitions associated with clinical depression and anxiety (e.g., “If I cannot do something really well, there is little point in doing it at all”).	The EDI is comprised of eight sub-scales, which measure drive for thinness, body dissatisfaction, perfectionism, maturity fears, bulimia, interoceptive awareness, ineffectiveness and interpersonal distrust. The Perfectionism subscale (EDI-P) of the instrument is comprised of six statements (e.g., “As a child, I tried very hard to avoid disappointing my parents and teachers”).	The SCANS was developed as an instrument for screening individuals at risk of developing an eating disorder. The SCANS-Perfectionism (SCANS-P) has twelve items to which the respondent is asked to endorse the extent to which they agree with statements such as “over the last couple of years how often have you felt able to accept a below-par performance from yourself?”	The NPQ was designed to identify experiences and attitudes theorized to be linked with the onset and maintenance of neurotic perfectionism in people diagnosed with eating disorders. It consists of 42-items, e.g., “unless I am constantly working toward achieving a goal, I feel dissatisfied”.	The PCI is comprised of 25-items and was developed to measure the frequency of automatic thoughts with themes involving perfectionism and beliefs that perfection should be reached (e.g., “my work should be flawless”).	The original 40-item DAS is a measure of self-defeating cognitions that are associated with symptoms of depression and anxiety. Based on factor analytic studies conducted by Imber et al. (1990) and Zuroff et al. (2000), the 15 perfectionism related items of the DAS are commonly referred to as the DAS-SC. (e.g., If I fail at my work, then I am a failure as a person”).
Summary of studies on reliability	Hewitt and Dyck (1986) reported acceptable levels of internal consistency ( $\alpha = .70$ ). Test-retest reliability reported to range from $r = .63$ at a two-month interval (Hewitt & Dyck, 1986) to acceptable, $r = .74$ at a two-week interval (Broday & Sedlacek, 1988)	Good internal consistency; $\alpha = .82$ for patients diagnosed with anorexia nervosa (Garner et al., 1983); with satisfactory levels reported as $\alpha = .72$ (Hall & Norring, 1990); and $\alpha = .79$ (Raciti & Norcross, 1987). Test re-test reliability reported as $r = .88$ at a three-week interval (Wear & Pratz, 1987) and $r = .70$ at a one-year follow-up (Crowther, Lilly, Crawford, & Shepherd, 1992).	The internal consistency of the SCANS has been reported to be unsatisfactory, with co-efficients of $r = .66$ (Slade & Dewey, 1986) and $r = .65$ (Slade, Dewey, Kiemle, & Newton, 1990).	Mitzman et al. (1994) reported good internal consistency ( $\alpha = .95$ ).	Flett et al. (1998) reported a good level of internal consistency with college students ( $\alpha = .96$ ) and psychiatric patients ( $\alpha = .95$ ). Test re-test reliability was .85 at a three-month-retest interval. Flett, Hewitt, Whelan and Martin (2007) reported satisfactory internal consistency of ( $\alpha = .95$ ).	Good levels of internal consistency ( $\alpha = .88$ ) have been reported in a large community sample (Dunkley & Kyparissis, 2008) and a clinical sample (Dunkley et al., 2006).

Summary of studies on validity	<p>Hewitt and Flett (1990) reported convergent validity of <math>r = .50</math> with the Self-Criticism Scale of the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, &amp; Quinlan, 1976). Evidence of discriminant validity was identified with a non-significant, low correlation of <math>r = .15</math> between the BPS and the DEQ Dependency Scale (Hewitt &amp; Flett, 1990)</p>	<p>Satisfactory concurrent validity evidenced by elevated scores on the EDI-P and most of the subscales on the FMPS (Frost et al., 1990) and the HMPS (Hewitt &amp; Flett, 1991a). Predictive validity of the EDI-P has also been demonstrated through an interaction between measures of life stress and depression (Joiner &amp; Schmidt, 1995).</p>	<p>Discriminant validity was reported by Slade, Butler and Newton (1989), who found there was no significant correlation between the SCANS-P and the Eysenck Personality Questionnaire (EPQ; Eysenck &amp; Eysenck, 1975) scales of Neuroticism and Extroversion. Evidence of predictive validity has been reported in a sample of long distance runners (Owens &amp; Slade, 1987) and in identification of students with abnormal eating attitudes (Kiemle, Slade, &amp; Dewey, 1987).</p>	<p>Davis (1997) reported evidence of convergent and discriminant validity, with the NPQ being highly correlated with HMPS (Hewitt &amp; Flett, 1991a) subscales of SOP (<math>r = .54</math>) and SPP (<math>r = .69</math>). Conversely, the NPQ was only minimally related to OOP (<math>r = .69</math>) and showed an inverse relationship with body esteem (<math>r = -0.57</math>).</p>	<p>Evidence of convergent validity has been reported with high correlations between the FMPS (Frost et al., 1991) and general symptoms of depression and anxiety. (Flett et al., 1998), and with all subscales on the HMPS (Flett et al., 2007). Ferrari (1995) reported a high level of internal consistency between the PCI and self-reports of obsessions and compulsions.</p>	<p>Evidence of convergent validity was found between the DAS-SC and depressive symptoms at a three and four year follow-up respectively in patients with clinical depression (Dunkley et al., 2006; Dunkley, Sanislow, Grilo, &amp; McGlashan, 2009). Excellent predictive validity has been demonstrated in bipolar affective disorder (Alloy et al., 2009); poorer treatment response at post-treatment (Blatt, Zuroff, Bondi, Sanislow, &amp; Pilkonis, 1998); poorer ability to cope with life stress at 18-month post-treatment follow-up (Blatt &amp; Zuroff, 2005).</p>
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### 1.3.2 Multidimensional Perfectionism Scales and the Limitations

The current research consensus is that perfectionism is best measured as a multidimensional construct in contrast to the traditional conceptualisation that it was a unidimensional personality trait (Blankstein & Dunkley, 2002). Several multidimensional measures of perfectionism have been developed. Those measures with acceptable psychometric properties are briefly described in Table 2, concluding with a more detailed review of the two most widely used multidimensional measures of perfectionism.

Whilst the multidimensional measures of perfectionism described in Table 2 have the strength of measuring multiple constructs associated with perfectionism, these scales also have the same main limitation as the unidimensional measures in that there have been limited studies that have investigated the psychometric properties of each scale. Furthermore, some of the measures listed have additional problems that need to be addressed through further research. More specifically, whilst Slaney et al. (2001) provided evidence of construct and convergent validity between the APS-R (Slaney et al., 1995) and some subscales of other perfectionism measures, many correlations between these subscale measures were not significantly correlated. The APS-R subscale of High Standards was significantly correlated,  $r = .64$ , with the SOP subscale of the HMPS (Hewitt & Flett, 1991a). It was also significantly correlated,  $r = .64$ , with the Personal Standards subscale of the FMPS (Frost et al., 1991) and grade point averages  $r = .42$ . The APS-R subscale of Discrepancy was also significantly correlated with the HMPS subscales of SOP ( $r = .31$ ) and SPP ( $r = .45$ ) and the FMPS subscales of CM ( $r = .55$ ) and DA ( $r = .62$ ). The APS-R subscale of Order was also highly correlated with the FMPS subscale of O,  $r = .88$ . However, all other correlations between the APS-R subscales and other subscales of the FMPS and HMPS were less substantial. Thus, further studies are required to establish the reliability and validity of the APS-R.

There has also been limited research to provide evidence of the validity of the PANPS (Terry-Short et al., 1995). Terry-Short and colleagues state that they included the SCANS in their study to establish validity, however no correlation statistics were reported. Furthermore, given the recent development of the PI (Hill et al., 2004), limited research has been conducted on the psychometric properties or application of the scale. In addition, the PI research was conducted on undergraduate university students therefore further independent research is required in clinical settings to examine the usefulness of the PI as a measure associated with psychopathology. Finally, whilst early indications of the CPQ (Fairburn et al., cited in Riley et al., 2007) are promising, further studies are clearly required to confirm the reliability and validity of this questionnaire. To establish the CPQ as a useful measure of psychopathology, further research is also required in clinical settings. For these reasons, the CPQ was not chosen as the perfectionism measure of choice in the present research.

Table 2

*Brief description and summary of psychometric properties of multidimensional measures of perfectionism*

Questionnaire	The Almost Perfect Scale-R (APS-R)	Positive and Negative Perfectionism Scale (PANPS)	Perfectionism Inventory (PI)	Clinical Perfectionism Questionnaire (CPQ)
Publication	Slaney, Ashby and Trippi (1995)	Terry-Short, Owens, Slade and Dewey (1995)	Hill et al. (2004)	Fairburn, Cooper and Shafran (unpublished, cited in Riley, Lee, Cooper, Fairburn, & Shafran, 2007)
Brief description of scale	The 32-item APS-R was developed to measure the possibility that perfectionism may have both negative and positive aspects. It is a three-factor measure, including High Standards, Order and Discrepancy. e.g., “my best just never seems to be good enough for me”.	The PANPS was developed to measure the distinction between positive and negative perfectionism. An example of a statement on the positive perfectionism subscale is “other people respect me for my achievements”, and an example of a statement on the negative perfectionism subscale is “I know the kind of person I ought or want to be, but feel I always fall short of this”.	The PI is a 59-item questionnaire comprised of 8 subscales including Organisation, Striving for Excellence, Planfulness, High Standards for Others, Concern Over Mistakes, Need for Approval, Rumination and Perceived Parental Pressure. An example of an item is “I drive myself rigorously to achieve high standards”.	The CPQ consists of 12-items designed to assess the cognitive, behavioural and affective components of goal setting and striving, and the consequences on the individuals’ evaluation of themselves when they do not meet their goals.
Summary of studies on reliability	Slaney et al. (2001) reported good levels of internal consistency, ranging from alpha = .82 to .92.	Good internal consistency, evidenced by alpha scores ranging from .83 – .88 were reported by Hasse, Prapavessis and Owens (1999; 2002). Hasse and Prapavessis (2004) reported good internal consistency values for the positive (alpha = .83) and negative (alpha = .81) scales.	In a series of three studies, Hill et al. (2004) reported alpha co-efficients ranging from .83 to .91 for the 8 PI scales. Test-retest reliability ratings ranged from $r = .71$ to $.91$ over a 3-6 week interval.	One study by Steele et al. (in press) has reported cronbach alpha coefficients of $r = .83$ in a clinical sample of participants with an eating disorder and $r = .74$ in undergraduate university students.
Summary of studies on validity	Evidence of construct and convergent validity was reported by Slaney et al. (2001) between subscales of the APS-R and the HMPS (Hewitt & Flett, 1991a) and the FMPS (Frost et al., 1990).	Terry-Short et al. (1995) reported good construct validity in athlete and clinical populations. Egan (2005) also reported strong convergent validity with the FMPS (Frost et al., 1991), but low discriminant validity with the BDI-II (Beck, Steer & Brown, 1996).	Hill et al. (2004) reported that the PI scales had strong associations with relevant constructs and weaker correlates with divergent constructs as measured by the FMPS (Frost et al., 1991); HMPS (Hewitt & Flett; 1991a); Fear of Negative Events Scale (FNE; Leary, 1983), the Obsessive Compulsive Inventory (OCI; Foa et al., 1998) and the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983).	Predictive validity for the CPQ was also found by Steele et al. (in press) who reported a unique association between the CPQ and symptoms of anxiety and depression, as measured by the Depression, Anxiety, Stress Scale (DASS; Lovibond & Lovibond, 1995) in both the clinical and non-clinical sample.

### 1.3.3 Hewitt Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991a)

The two multidimensional measures of perfectionism that have received the greatest focus in the research were developed by independent parties and are both named the Multidimensional Perfectionism Scale (MPS).

Hewitt and Flett (1991a) developed the HMPS, which is 45-item self-report measure of perfectionism. This questionnaire provides a measure of three aspects of perfectionism: self-oriented perfectionism (SOP): the setting of high standards and self-criticism for not meeting those standards; other-oriented perfectionism (OOP): setting of unrealistically high standards for others; and socially-prescribed perfectionism (SPP): the perceptions that others hold unrealistically high standards for the individual.

The HMPS was derived from an initial pool of 122 items thought to reflect the three dimensions of perfectionism being measured. Through examining correlations between these items and other subscales, the items were reduced to 15 items per subscale. Respondents are asked to rate each item on a 7-point Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree). An example of an item for the SOP is “I must always be successful at school or work”. A principal components analysis of the HMPS using student and psychiatric participants identified a three-factor solution corresponding to the original subscales (Hewitt & Flett, 1991a).

Evidence of good internal consistency for the HMPS has been provided by Hewitt and Flett (1991a), with alpha coefficients of .86 (SOP), .82 (OOP) and .87 (SPP). Test-retest reliabilities for the HMPS were reported as  $r = .88$  (SOP),  $r = .85$  (OOP) and  $r = .75$  (SPP) over a three month interval. In their extensive review of the HMPS, Enns and Cox (2002) concluded that the measure has reliable psychometric properties and validity. More specifically, they concluded evidence of convergent, discriminant and predictive validity has been provided in relation to numerous symptom measures and disorders including eating disorders (Hewitt, Flett, & Ediger, 1995), anxiety (e.g., Blankstein, Flett, Hewitt, & Eng, 1993), personality traits (e.g., Ferrari & Mautz, 1997) and self-esteem (e.g., Preusser, Rice, & Ashby, 1994).

Limitations of the HMPS have been noted to include requiring further studies into the OOP subscale and a greater range of social contexts (Enns & Cox, 2002). The HMPS has also been criticised for measuring the construct of perfectionism as beyond the scope of a self-oriented original construct of perfectionism. That is, by including the SPP and OOP subscales into the multidimensional measurement of perfectionism, it has been said that the HMPS provided a stronger emphasis on more interpersonal emphasis rather than an intrapersonal emphasis

(e.g., Parker & Adkins, 1995; Shafran, Cooper, & Fairburn, 2002; & Shafran & Mansell, 2001). Furthermore, the use of the SOP subscale as a measure of maladaptive perfectionism has been queried given the inconsistent associations identified in the research. Some research has noted that SOP has been associated with more negative, maladaptive aspects of perfectionism, such as negative affectivity and psychopathology (e.g., Hewitt & Flett, 1991a). In contrast, other research has identified that SOP has been associated with desirable positive types of perfectionism and achievement striving, such as conscientiousness and active forms of behavioural coping (Flett, Russo, & Hewitt, 1994). Stoeber and Otto (2006) undertook a review of research and concluded that perfectionism, as measured by the HMPS, has also been associated with adaptive components and rewards in student populations. Thus, despite the HMPS possessing reliable psychometric properties and validity, the research has been inconsistent in its conclusions regarding the usefulness of the HMPS as a self-focused measure of perfectionism.

#### **1.3.4 Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990)**

Frost et al. (1990) developed a 35-item self-report questionnaire (FMPS) that was derived from an original group of 67 items theoretically related to existing measures of perfectionism and other measures of psychopathology that are associated with perfectionism. Some items were taken from three existing measures of perfectionism, the Burns Perfectionism Scale (Burns, 1980), the Eating Disorders Inventory (Garner et al., 1983) and the Maudsley Obsessional Compulsive Inventory (MOCI; Hodgson & Rachman, 1977). The new items on the FMPS scale were selected on the basis of conceptual fit with important features of perfectionism that Frost and colleagues had identified in their literature review including having excessively high personal standards and concerns over mistakes in performance; high expectations and critical evaluations from one's parents; doubts regarding one's performance and an emphasis on the importance of order, organisation and precision (Enns & Cox, 2002).

Frost and colleagues (1990) identified a six factor solution for the FMPS, measuring six dimensions of perfectionism: (i) Concern over Mistakes (CM); (ii) Personal Standards (PS); (iii) Parental Expectations (PE); (iv) Parental Criticisms (PC); (v) Doubts about Actions (DA); and (vi) Organisation (O). The CM dimension included items pertaining to perceiving mistakes to be a failure and reacting negatively to making mistakes, for example; "If I fail at school/work, I am a failure as a person". The items on the PS dimension relate to setting high personal standards, for example: "I have extremely high goals". The PE items pertain to the respondent's belief that their parents had high expectations, for example; "My parents set very high standards for me". The dimension of PC is comprised of items pertaining to the respondent's belief that their parents would react with criticism if they did not attain the high



standards that were set, for example; “As a child, I was punished for doing things less than perfect”. Items on the DA dimension relate to doubt over one’s own performance, for example; “Even when I do something carefully, I often feel that it is not quite right”. Finally, the O dimension contains items pertaining to being a neat person and having a high level of organisation, for example; “organisation is very important to me”. The O subscale is not used in computing the overall perfectionism score on the FMPS after Frost et al. (1990) concluded that organisation was not a core component of perfectionism after this subscale showed the weakest correlation to the other subscales that in contrast were highly correlated with each other. In addition, the O subscale was only found to be highly correlated with one other measure associated with perfectionism that the FMPS was compared against, which was the Irrational Beliefs Test (IBT; Jones, 1968).

The FMPS has been used in numerous studies on a wide range of psychological disorders in clinical and non-clinical samples (Frost & Di Bartolo, 2002). The FMPS dimensions have been found to be strongly correlated with obsessive-compulsive symptoms (Chik, Whittal, & O’Neil, 2008; Frost, Novara, & Rheume, 2002; Frost & Steketee, 1997; Frost, Steketee, Cohn, & Griess, 1994; Rheume, Freeston, Dugas, Letarte, & Ladoucheur, 1995); depressive symptoms (Beck, Freeman & Davis, 2004; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Minarik & Ahrens, 1996; Sassaroli, Lauro, Ruggiero, Mauri, Vinai & Frost, 2008); social anxiety (Rosser, Issakidis, & Peters, 2003; Juster et al., 1996) and eating disorders (Bardone-Cone et al., 2007; Bastiani et al., 1995; Fairburn, Cooper, & Shafran, 2003; Minarik & Ahrens, 1996; Srinivasagam et al., 1995).

The FMPS scale has been found to have good psychometric properties, with internal consistency of the six subscales ranging from .77 to .93 (Frost et al., 1990; 1993). Test re-test reliability was reported as .63 to .82 for the FMPS subscales (Fei & Xu, 2006). Frost et al. (1990) also found that the scale had good construct validity as there was a strong correlation of  $r = .84$  with the Burns Perfectionism Scale (BPS, Burns, 1980). However, Frost et al. noted that this high correlation might be attributable to some of the items on the FMPS being taken from the BPS. Enns and Cox (2002) suggested that stronger evidence for the convergent validity of the FMPS might be found in the considerable overlap with the HMPS (Hewitt & Flett, 1991a). In a review of the measurement scales of perfectionism, Enns and Cox also concluded that the FMPS had sound construct, concurrent and discriminant validity.

Of criticisms leveled at the FMPS, Rheume, Freeston and colleagues (1995) argued that the sub-scales of PC and PE are confounding variables with possible aetiological factors that may contribute to the development of perfectionism and therefore make it difficult to interpret results and understand the construct of perfectionism. Shafran and Mansell (2001) stated that

the doubts about actions sub-scale reflect the checking symptoms associated with OCD rather than the construct of perfectionism. Finally, Enns and Cox (2002) state that longitudinal studies have yet to be published that demonstrate the predictive power of the FMPS and that there have been limited studies on the diagnostic specificity of the FMPS.

Whilst the original 6-factor structure of the FMPS has been confirmed (e.g., Frost et al., 1990; Parker & Atkins, 1995; Parker & Stumpf, 1995), some researchers have argued that the FMPS may be better considered as having the following three factor solution (i) Personal Standards (ii) Concern over Mistakes and Doubts and (iii) Parental Expectations and Criticisms (Purdon, Antony, & Swinson, 1999; Stoeber, 1998). However, there have also been factor analyses performed on the subscales from both the FMPS and HMPS (Hewitt & Flett, 1991a), which have reported that a two-factor solution provided the best fit for the measures (Bieling, Israeli, & Antony, 2004; Frost et al., 1993). The two factors were labeled (i) Maladaptive Evaluative Concerns (MEC: comprised of SOP and CM, DA, PC, and PE) and (ii) Positive Striving (PS: comprised of OOP, PS and O).

#### **1.3.4.1 Debate between multidimensional versus unidimensional conceptualisation of perfectionism**

Recently, there has been debate in the literature as to whether the construct of perfectionism used in the HMPS and FMPS, is going beyond that of the original construct, which is historically seen as self-focused (Shafran et al., 2003). Perfectionism has been defined as a self-focused personality trait in earlier research (e.g., Burns, 1980). This self-focused notion of perfectionism is also consistent with theoretical research that identifies it as being a maintaining factor in a range of Axis I psychological disorders, such as the cognitive behavioural notion that thoughts about the relationship with the self are a central component for change in psychological intervention (e.g., Beck, 2003; Shafran et al., 2002; 2003).

Shafran et al. (2003) argue that in line with the corresponding theory, effective self-focused cognitive behavioural therapy interventions have been developed for many Axis I psychological disorders, such as post-traumatic stress disorder, panic disorder, social phobia and bulimia nervosa. These interventions have a central focus on identifying specific self-focused maintaining mechanisms to these disorders and have not required interpersonal aspects to be a main area of focus (e.g., Barlow, Raffa, & Cohen, 2002; Foa, Keane, & Friedman, 2002). This argument is compatible with the research that has identified perfectionism to be a maintaining factor for OCD (Obsessive Compulsive Cognitions Working Group, 1997) and eating disorders (Fairburn, Cooper, & Shafran, 2003).

On the basis of this theoretical and empirical research, Shafran et al. (2002; 2003) argue that

whilst the SPP and OOP subscales measured by the HMPS (Hewitt & Flett, 1991a) may only assess constructs that are related to perfectionism, and not perfectionism per se, which is seen as a self-focused construct. Shafran et al. (2002) define clinical perfectionism as “...the overdependence of self-evaluation on the determined pursuit of personally demanding, self-imposed, standards in at least one highly salient domain, despite adverse consequences” (p.778). Consequently, Shafran and colleagues (2003) assert that clinical perfectionism should only be studied from a self-oriented perspective. Hewitt et al. (2003) have contested this view by citing evidence that identified the SPP scale to be elevated in a range of clinical disorders (Hewitt & Flett, 1991). In response, Shafran et al. (2003) argued that their definition of clinical perfectionism is made from a clinical perspective based on theories and treatments that have not incorporated other-oriented treatment factors and maintain that a focus on identifying and treating SOP is more likely to result in effective treatment of psychopathology.

Shafran et al. (2003) have also argued that the FMPS (Frost et al., 1990) dimensions of Parental Expectations and Criticisms do not measure the construct of perfectionism per se as they do not provide a measure of self-evaluation, but rather a measure of evaluation of thoughts pertaining to others. Shafran et al. (2003) suggested that the construct of clinical perfectionism is, however, consistent with the items comprising the FMPS subscales of PS, CM and with some of the items on the DA subscale. Shafran and colleagues’ arguments that the construct of perfectionism is not measured by all of the subscales of the FMPS is said to be consistent with research that has suggested that the FMPS may be better considered as having a three factor solution (i) Personal Standards (ii) Concern over Mistakes and Doubts and (iii) Parental Expectations and Criticisms (Stoeber, 1998; Purdon et al., 1999). However, the finding of a three-factor solution on the FMPS may alternatively be indicative of the importance of measuring aetiological factors, such as parental expectations, and maintaining factors, such as CM and DA, separately. These aetiological and maintaining factors may be equally important in the initial measurement of perfectionism, however, it may be that only the maintaining mechanisms are sensitive to treatment changes as the aetiological factors would likely remain more static. Therefore, further research is required to examine aetiological models of perfectionism to refine or guide the measurement tools of this construct.

#### **1.3.4.2 Summary of multidimensional measures of perfectionism**

The current consensus appears to favour the measurement of perfectionism as a multidimensional construct. Further research into the APS-R (Slaney et al., 1995), PCI (Hill et al., 2004) PANPS (Terry-Short et al., 2005) and CPQ (Fairburn et al., cited in Riley et al., 2007) is necessary given the scale’s recent development, and given the limited information

on psychometric properties. The FMPS (Frost et al., 1990) and HMPS (Hewitt & Flett, 1991a) are the two measures that have received the most attention and have well demonstrated psychometric properties in numerous studies with both non-clinical and clinical samples with a range of psychological disorders (see Frost & Di Bartolo, 2002 for a review). However, Shafran and colleagues (2002; 2003) have argued that the OOP and SPP measured by the HMPS do not assess the original construct of perfectionism per se, instead assessing related constructs. As the original construct of perfectionism is seen as a self-focused construct, the FMPS may provide a better measure of the integral elements of clinically relevant perfectionism as it focuses on measuring perfectionism that is related to the self. However, given the different higher-order factors that have been reported when examining the factor-structure of the FMPS, future research using this measure may need to start by confirming the factor structure of this questionnaire before proceeding to analysis. Furthermore, it is not necessarily the case that the parenting subscales of the FMPS do not measure aspects of perfectionism related to the self as Shafran and colleagues (2003) suggest. It may be that the parenting subscales measure aetiological factors of perfectionism as opposed to maintaining factors. Therefore, further research is required to examine the factor structure of the FMPS and consider how these subscales may be best understood in the construct of perfectionism.

## **1.4 The Relationship Between Perfectionism and Psychopathology**

An understanding of perfectionism, including its aetiological and maintaining factors, is vital given the volume of research that has consistently found a relationship between perfectionism, psychopathology and distress in clinical and non-clinical samples. Shafran and Mansell (2001) and Egan et al. (in press) have provided literature reviews in the area of perfectionism and a range of psychological disorders and Bardone-Cone et al. (2007) undertook a literature review on perfectionism and eating disorders. These reviews have confirmed the well-established link between perfectionism and psychopathology. It has been demonstrated that perfectionism is a significant transdiagnostic risk and maintaining factor for psychological disorders (Egan et al., in press). A review of the empirical evidence for the main identified psychological disorders will be provided in this section.

### **1.4.1 Eating Disorders**

The link between perfectionism and eating disorders is well established, as identified in four extensive literature reviews on the topic. First, Stice (2002) performed a meta-analysis of the literature and identified that perfectionism appears to be a maintaining factor for general eating pathology, and a possible risk factor for the development of bulimic symptoms.

Second, Jacobi, Hayward, de Zwaan, Kraemer, and Agras (2004) concluded that perfectionism was correlated with eating disorder pathology in their review of empirical literature, which included cross sectional designs, longitudinal designs and retrospective studies. Third, Lilenfeld, Wonderlich, Riso, Crosby and Mitchell (2006) also concluded that perfectionism appeared to be a predisposing factor to the development of an eating disorder. Fourth, and consistent with the previous findings, Bardone-Cone et al. (2007) performed an extensive literature review and concluded that there was a consistent pattern of maladaptive perfectionism among patients with eating disorders, and especially those with anorexia nervosa. Bardone-Cone et al. (2007) defined maladaptive perfectionism as measured by the FMPS (Frost et al., 1990) subscales of CM, DA, PE and PC; the HMPS (Hewitt & Flett, 1991a) SPP subscale; and also stated that the BPS (Burns, 1980), EDI-P (Garner et al., 1983), and the Obsessive Beliefs Questionnaire-Perfectionism (Obsessive Compulsions Cognitions Working Group, 2001) were also more closely related to maladaptive than adaptive perfectionism.

Perfectionism has been identified as a particular risk factor for the development of bulimia nervosa (Fairburn et al., 1998; Lilenfeld et al., 2000) and anorexia nervosa (Fairburn et al., 1999; Lilenfeld et al., 1998) as well as being identified as a predictive factor for subclinical bulimic symptoms, which was mediated by self-esteem (Vohs, Bardone, Joiner, & Abramson, 1999). Moreover, perfectionism is regarded as a central factor and necessary condition for the development of eating disorders (Fairburn, 1997; Slade, 1982). Consistent with theory, individual studies have consistently identified an association between eating disorders and perfectionism as measured by a range of questionnaires, including the Frost et al. (1990) FMPS subscales (Bastiani et al. 1995; Halmi et al., 2000; Lilenfeld et al., 2000; Minarik & Ahrens, 1996; Sassarloi et al., 2008); the Hewitt and Flett (1990) HMPS subscales (Bastiani et al., 1995; Cockell et al., 2002; Hewitt, Flett, & Ediger, 1995; Pratt, Telch, Labouvie, Wilson, & Agras, 2001; cited in Bardone-Cone et al., 2007); and the Garner et al.'s (1983) EDI (e.g., Bastiani, et al., 1995; Halmi et al., 2000; Sutander-Pinnock, Woodside, Carter, Olmstead, & Kaplan, 2003). However, there have been two studies that have not identified elevated perfectionism scores on the EDI in a non-depressed anorexia nervosa sample (Bizeul, Brun, & Rigaud, 2003) and a group of patients with restricting anorexia nervosa (Tachikawa et al., 2004).

#### **1.4.2 Anxiety Disorders**

A high level of perfectionism has been found to characterise many of the anxiety disorders, with most research focusing on the relationship between perfectionism and OCD, and social phobia (Bardone-Cone et al, 2007; Shafran & Mansell, 2001). No studies have examined perfectionism in clinical populations of patients with post-traumatic stress disorder or

generalised anxiety disorder (Egan et al., in press).

#### **1.4.2.1 Obsessive-Compulsive Disorder (OCD)**

When compared to all of the anxiety disorders, the relationship between perfectionism and OCD has had the longest recognised association (Sassaroli et al., 2008). Perfectionism is considered to be a risk factor for the development of OCD (Obsessive Compulsive Cognitions Working Group, 1997) and is theorised to develop as a way of attempting to maintain control over perceived threats (e.g., Janet, 1909; Salzman, 1968).

Research has identified that the MEC combination of subscales from the FMPS (Frost et al., 1990) is greatest among patients with OCD when compared to other anxiety disorders and non-clinical groups (e.g., Antony et al., 1998; Frost & Steketee, 1997; Shafran & Mansell, 2001; Tolin, Worhunsky, & Maltby, 2006). However, as noted by Sassaroli et al. (2008), not all of the MEC subscales seem to carry equal importance with OCD populations. The CM and DA subscales were found to be significantly higher among OCD patients when compared to a nonclinical control group. However, the same finding was not observed for PE and PC subscales. Similarly, Sassaroli et al.'s study found that CM and DA were elevated for their OCD group, whereas, PS was not significantly elevated. Antony et al. found that SPP was significantly higher in the OCD group, compared to the nonclinical control group, but not when compared to the psychiatric control group diagnosed with either social phobia or panic disorder.

Subclinical levels of OCD have also been observed to be strongly associated with high overall levels of perfectionism (Frost et al., 1990; Frost, Steketee, Cohn, & Greiss, 1994). Consistent with the research with clinical populations of OCD, the strongest relationships were observed for CM and DA, with the latter construct said to form part of the phenomenology associated with OCD (Shafran & Mansell, 2001). Contrary to Sassaroli et al.'s (2008) findings, PS was found to be related to obsessive compulsive symptoms in a study by Frost and colleagues (1994).

#### **1.4.2.2 Social Phobia**

Theoretical accounts of social phobia suggest that people who desire to present the perfect image to others will experience heightened levels of social anxiety (Leary, 1983; Shafran & Mansell, 2001). Heimberg, Juster, Hope, and Martin's (1995) model of social phobia proposes that a combination of genetic susceptibility and early life experiences combine to allow people to view social experiences as threatening. People then develop a set of perfectionist standards for social performance in an attempt to avoid expected social

humiliation, which may lead to anxiety and subsequent avoidance.

Elevated levels of CM, DA and PC have been found in patients with social phobia (Juster, Heimberg, Frost, & Holt, 1996). Antony et al. (1998) found that a group of patients with social phobia showed elevated SPP in comparison to the non-clinical group and to groups of patients with OCD and specific phobia. There was no difference in scores between patients with panic disorder. However, Saboonchi, Lundh and Ost (1999) did observe a significant difference between CM and DA in their social anxiety group when compared to patients with panic disorder.

In non-clinical samples, SPP has been associated with social anxiety (Blankstein, Flett, Hewitt, & Eng, 1993; Saboonchi & Lundh, 1997), increased levels of worry and autonomic arousal in situations perceived as socially threatening (Glett, Hewitt, Endler, & Tassone, 1995), more negative perceived social interactions (Flett, Hewitt, Garshowitz, & Thomas, 1997), lower self-perceived social skills (Flett, Hewitt, & DeRosa, 1996), and psychological adjustment problems including lower levels of social self-esteem, fear of negative evaluation and greater loneliness.

#### **1.4.2.3 Panic disorder with and without Agoraphobia**

The studies conducted in the area of panic disorder and perfectionism have also revealed a consistent relationship with the construct. Ikentani et al. (2002) found that the overall perfectionism score of the FMPS (Frost et al., 1990) was significantly elevated in patients with panic disorder and agoraphobia. When compared to control groups, patients with panic disorder have also shown elevated SOP (Antony et al., 1998) and SPP (Frost & Steketee, 1997; Saboonchi et al., 1999).

#### **1.4.3 Depressive Disorders and Suicidal Ideation**

An association between perfectionism and depression has been frequently reported in clinical and non-clinical samples using various measures of perfectionism and depression. In a recent literature review, Egan et al. (in press) concluded that measures of self-oriented perfectionism were correlated with psychopathology in individuals with depression, as measured by the CM subscale (Haprich, Porcelli, Keaschuk, Binenda & Engle, 2008) and the SOP scale (e.g., Norman, Davies, Nicholson, Cortese, & Mulla, 1998). A positive association between SOP and depression has also been observed in studies by Hewitt and Flett (1991) and Hewitt et al. (1996). Consistent with the literature on eating disorders, elevated levels of CM and DA have been found in patients diagnosed with depressive disorders compared to control groups (Enns et al., 2001). More specifically, Hewitt et al. (1996) concluded that SOP had a significant

interaction with achievement stress to predict symptoms of depression. Maladaptive perfectionism has also been found to predict depressive symptoms in adolescents at a one-year interval (Soenens, Vansteenkiste, Luyckx, Luyten, Duriez, & Goosesens, 2008).

Shafran and Mansell (2001) noted that the strongest association is apparent between SPP and depression, as measured by the Beck Depression Inventory (BDI; Beck 1976) (Enns & Cox, 1999; Flett, Hewitt, Blankstein, & O'Brien, 1991; Hewitt & Flett, 1991; Wyatt & Gilbert, 1998). Egan et al. (in press) also reported that scores on HMPS (Hewitt & Flett, 1991a) SPP and the DAS-SC (Dunkley et al., 2006) were predictive of depressive symptoms (e.g., Dunkley et al., 2006; Hewitt et al., 1996; O'Connor, Rasmussen, & Hawton, 2010).

Depression has been theoretically linked with hopelessness and low levels of perceived control in relation to negative outcomes (e.g., Beck, 1976; Shafran & Mansell, 2001). Donaldson, Spirito and Farnett (2000) found that in adolescents who had attempted suicide there was a significant association between SPP and hopelessness. Hart, Gilner, Handal, and Gfeller (1998) also found an association between SOP and lower levels of self-efficacy. Martin, Flett, Hewitt, Krames, and Szanto (1996) also found an interaction between SPP and low self-efficacy, which predicted increased levels of depression and psychosomatic symptoms. Furthermore, Preusser, Rice, and Ashby (1994) found self-esteem to be a mediating factor between perfectionism and depression in a non-clinical sample. It is hypothesised that the same mediating relationship would be observed in clinical samples (Rice, Ashby, & Slaney, 1998). DiBartolo et al. (2008) recently provided empirical evidence that contingent self-worth and self-concealment mediated the relationship between PS, CM, DA, PC and PE and symptoms of depression, anxiety and eating disorders. Contingent self-worth is described as the extent to which self-worth is dependent upon performance, activity and/or accomplishment (DiBartolo et al., 2004); whereas self-concealment is an attempt to avoid negative evaluation from others by maintaining a flawless appearance and concealing negative personal information (Frost et al., 1993).

Further evidence for a strong association between perfectionism and depression is provided through the literature on suicidal ideation, which is known to be strongly associated with depression (e.g., American Psychological Association [APA], 1994). In student and psychiatric populations, suicidal ideation has been found to be strongly associated with SOP and SPP (Hamilton & Schweitzer, 2000; Hewitt, Flett, & Weber, 1994; & Hewitt, Newton, Flett, & Callender, 1997). Furthermore, research using hierarchical regression analyses has found that SPP interacted with recall of negative and positive memories to predict suicidal ideation and depression in a clinical sample of patients who had recently been hospitalised following deliberate self-harm (Rasmussen & O'Connor, 2008).



Finally, a recent literature review by Alloy, Abramson, Urosevic, Bender and Wagner (2009) found that cognitive styles characterised by perfectionism, excessive goal striving and self-criticism predicted risk for bipolar affective disorder episodes and symptoms. More specifically, Alloy et al. (2009) stated that this unique profile of cognitive styles, characterised by perfectionism has been consistently observed in individuals with euthymic bipolar disorder episodes. Furthermore, several other studies found that individuals at increased risk for bipolar affective disorder prone to hypomanic and manic episodes exhibited overly ambitious goal setting and striving (Sanderson & Carver, 2006; Sanderson, Ruggero, & Carver, 2005; Meyer & Krumm-Merabet, 2003).

#### **1.4.4 Personality Disorders**

A preoccupation with perfectionism has been noted as one of the central features of obsessive compulsive personality disorder (OCPD) in the Diagnostic and Statistical Manual of Mental Disorders – fourth edition (DSM-IV: APA, 1994). However, to date, there have been few studies that have examined the relationship between perfectionism and personality disorders. The limited studies that have investigated this relationship have used populations with a range of personality disorders.

First, Hewitt and Flett (1991b) identified significant associations between SPP and schizoid, schizotypal, borderline, avoidance and passive-aggressive personality. They also found a positive relationship between OOP and narcissistic, histrionic and antisocial personality types. However, OOP was negatively associated with schizotypal personality. Second, Hewitt et al. (1994) found significantly higher levels of SPP in a sample of 13 inpatients diagnosed with borderline personality disorder compared to patients with schizophrenia and the healthy control group. However, no differences on OOP or SOP were noted. Third, Iketani et al. (2002) noted that avoidant and obsessive compulsive personality disorders were found to be significant indicators of perfectionism as measured by the FMPS (Frost et al. 1990). However, the validity of the diagnoses of the personality disorders made in Iketani et al.'s (2002) study may need to be interpreted cautiously, as the study used a Japanese version of the Structured Clinical Interview for DSM-II-R (SCID-II, Spitzer, Williams, & Gibbon, 1987), and thus may differ from the English version by virtue of translation and cultural subtleties. Furthermore, this tool has no documented psychometric properties and uses diagnostic categories from the DSM-III-R (APA, 1987), which may be no longer used in the current DSM-IV (APA, 1994). Finally, McGown and Carlson (2004) noted that patients diagnosed with narcissistic personality disorder (NPD) had elevated SPP compared to patients diagnosed with antisocial personality disorder (APD) or a mood disorder. The NPD patients also had elevated OOP than the mood disorder clients. The NPD and APD patients

also had significantly lower SOP than the clients diagnosed with mood disorders.

#### **1.4.5 Co-morbidity in Psychopathology and Perfectionism**

One of the most obvious reasons that perfectionism has been found to be associated across a wide range of psychological disorders is that the construct may be a common underlying factor across psychopathology resulting in issues of comorbidity. This view is becoming more widespread among authors in the field. Beiling et al. (2004) argue that perfectionism may be a critical factor in understanding levels of co-morbidity in psychopathology. They assert that given the wealth of empirical evidence that demonstrates an association between perfectionism and many psychological disorders, as opposed to a single disorder, perfectionism may be an underlying factor across several categories of psychopathology and psychological disorders. Beiling et al. found that CM, DA and PC correlated with the number of co-morbid diagnoses, including co-morbid depression and anxiety. Fairburn et al. (2003) also view perfectionism as a transdiagnostic issue that operates as a maintaining factor across all eating disorders. Egan et al. (in press) also concluded that perfectionism is a transdiagnostic process for several reasons including, perfectionism is elevated across a range of psychological disorders; perfectionism offers an explanation for the high rates of co-occurrence between psychological disorders; perfectionism operates as a maintaining mechanism that is included in many cognitive-behavioural models of disorders; and finally that elevated levels of perfectionism have been found to impede psychological treatment in a range of disorders and when targeted directly has often been found to reduce a variety of psychopathologies.

Halmi et al. (2005) found the highest levels of perfectionism in individuals with eating disorders and co-morbid OCD and OCPD, as measured by the FMPS. Similarly, Kaye et al. (2004) found that the highest levels of perfectionism, as measured by the FMPS, were found in individuals with eating disorders who also had a lifetime history of one or more anxiety disorders. Bulik et al. (2004) also found that individuals with co-morbid eating disorders and alcohol use disorders had higher scores on CM, DA, PC, PE and total perfectionism on the FMPS, when compared to individuals with single diagnoses. Consistently, Milos et al. (2004) also found higher levels of perfectionism in individuals with eating disorders and co-morbid anxiety and depression, when compared to having an eating disorder with no co-morbidity.

Sassaroli et al. (2008) compared perfectionism in depression, OCD, and eating disorders. They found that elevations in CM were evident in all of the disorders and DA was elevated in patients with OCD and eating disorders, but not with depression. Personal Standards was only elevated in patients with eating disorders. They found that CM accounted for most of the variance in the relationship between these disorders and perfectionism. Therefore, whilst

there is considerable research that supports the role of perfectionism in co-morbidity of psychological disorders, further research is needed into whether particular dimensions of the construct are related to specific disorders or are observed in co-morbidity in psychopathology.

#### **1.4.6 Summary of Perfectionism and Psychopathology**

In summary, it is apparent from the literature that perfectionism is related to a range of psychological disorders and health concerns. Particular dimensions of the construct have reliably been found to be associated with certain psychological disorders. Overall, the strongest relationship between eating disorders and perfectionism has been found with the CM, DA and PS scales on the FMPS (Frost et al., 1990), SOP on the HMPS (Hewitt & Flett, 1991), and the EDI-P (Garner et al., 1983). High levels of perfectionism have been associated with anxiety disorders and have been found to particularly characterise OCD and social phobia. OCD seems to be associated with high levels of CM and DA, and social phobia is most often associated with high levels of SPP, CM, DA and sometimes PC. Evidence has been found to support a relationship between depressive disorders and perfectionism, including SPP and SOP as well as subscales of the FMPS. There has also been a small volume of evidence found for a relationship between perfectionism and personality disorders.

Several studies have found variables such as self-worth and self-esteem to mediate the relationship between perfectionism and a range of psychological disorders, including depression, anxiety and eating disorders. Whilst these studies have extended the correlational research in the area, further research is required to examine the mediating role of self-worth/self-esteem in a model of perfectionism. Existing studies have only examined the role of self-worth/self-esteem as a mediating factor between perfectionism and psychological disorders, however it is also possible that self-worth/self-esteem may play a mediating role as an aetiological factor in the development of perfectionism. Thus, the role of mediating factors in the relationship between perfectionism and psychopathology needs to receive increased attention in future research.

Finally, several lines of research support the theory that perfectionism may be viewed as a transdiagnostic factor across psychopathology, including elevated levels of perfectionism across a range of disorders, the maintaining role of perfectionism in disorders, the findings that several psychopathologies are reduced when perfectionism is targeted directly and that treatment is often impeded when elevated perfectionism is present.

As research has established a link between perfectionism and a wide range of psychological disorders, further research may be required to examine the dimensions of the construct

associated with specific forms of psychological disorders and as a transdiagnostic factor in psychopathology. There are several possible reasons as to why a wide range of psychological disorders and issues are associated with perfectionism. The setting of high personal standards that are constantly reappraised and increased may result in several outcomes, including a constant feeling of anxiety that one's efforts are not good enough, which could lead to a perpetual cycle of achievement striving, and never feeling contingent self-satisfaction or self-worth. In the case of OCD, this could lead to obsessive thoughts about wanting to attain perfect hygiene to avoid contamination fears, followed by compulsive behaviour, such as trying to ensure that one's hands are perfectly clean. In regard to eating disorders, this could lead to a drive to achieve the perfect self-image and resulting restrictions in eating behaviour and excessive exercise. When experiencing social phobia, the perfectionist's thoughts may pertain to presenting an idealised image of oneself and feeling high levels of anxiety regarding speaking incorrectly or dressing inappropriately. A final example is in relation to depression, whereby having perfectionist standards could lead to feeling 'burnt out' and never feeling good enough as one's personal standards are never reached.

The importance of perfectionism in specific psychological disorders and as a transdiagnostic issue is clearly an area that is worthy of further research in the development and maintenance of psychological disorders. However, a major problem inherent in the research establishing a link between psychological disorders and perfectionism is that the vast majority of studies in this area are correlational, which prevents conclusions regarding directionality or cause and effect to be made. Therefore, it is not possible to conclude whether perfectionism contributes to the development of psychological disorders or vice versa. It is also not possible to conclude from correlational studies whether perfectionism contributes to the development of psychological disorders; whether perfectionism maintains a psychological disorder once it is formed; or whether it is both an aetiological and a maintaining factor. A second problem pertaining to studies in this area is the widespread use of university student samples, which limits the generalisability to clinical samples. Thus further research in this area needs to investigate the directionality between perfectionism and psychological disorders in both specific psychological disorders and as a transdiagnostic issue in patients with co-morbid psychological disorders and issues.

### **1.5 Models of Maintaining Factors of Perfectionism**

Following from the consensus that there is a strong relationship between perfectionism and psychological disorders, two models have been developed that propose that perfectionism is a transdiagnostic maintaining factor in psychological disorders (Shafran et al., 2002; Slade & Owens, 1998). These models have viewed perfectionism as a transdiagnostic factor that

maintains psychological disorders.

### **1.5.1 Shafran and Colleagues (2002) Model of Clinical Perfectionism**

Shafran et al. (2002) developed a cognitive-behavioural model of the maintaining factors of clinical perfectionism. Shafran et al. view perfectionism as a unidimensional construct and state that

clinical perfectionism is maintained by the setting of dichotomous standards, evaluating the striving and attainment of performance in a biased way, self-criticism if the standards are not met in the salient domain and, if standards are met, re-appraising them as insufficiently demanding (p.787).

Their model includes the following maintaining factors: (1) a morbid fear of failure and relentless pursuit of success; (2) setting of standards that embody dichotomous thinking; (3) the need for self control; (4) evaluation of performance; (5) failure to meet standards as performance is self-evaluated in a negative biased way; (6) successfully meeting standards that can serve as an intermittent reinforcer of standards that are then re-appraised as being insufficiently demanding; and (7) other maintaining factors of the construct such as society praising high standards and the sense of structure and control that can be developed through clinical perfectionism.

The model has recently been revised and updated by Shafran et al. (2010) and is depicted in Figure 1. As is evident in the model, there is an emphasis on one's self worth being overly dependent on striving and achievement. Due to the setting of inflexible and rigid standards that are constantly re-appraised and set at a higher point, no matter how much a person strives or achieves they will never feel that they are good enough.

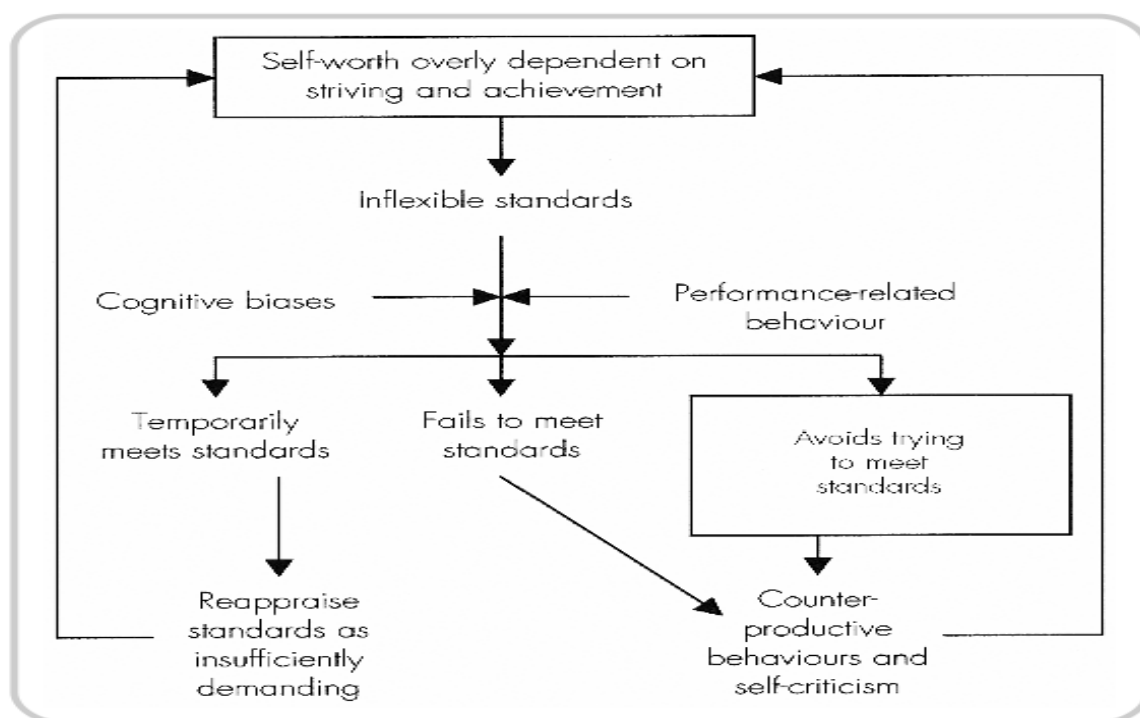


Figure 1. *The revised cognitive-behavioural model of clinical perfectionism, reproduced from Shafran et al. (2010), p.57.*

To date this model has not been directly empirically tested with all aspects of the model simultaneously. However, previous research has supported many aspects of this model. Ferrari and Mautz (1997) found that rigidity in thinking was associated with perfectionism as measured by all scales on the HMPS (Hewitt & Flett, 1991a). Egan, Piek, Dyck and Rees (2007) also found that dichotomous thinking was associated with negative perfectionism, as measured by the PANPS (Terry-Short et al., 1995). Kobori, Hayakawa and Tanno (2009) found that after perfectionists achieved their goals they raise their expected standards. In the study conducted by Kobori et al., it was found that college students with higher levels of perfectionism were more likely to choose a more difficult goal for their next task following feedback that they had successfully achieved a previous goal. Stoeber, Kempe and Keogh (2008) also found that following failure in a task, individuals with higher SOP and SPP reported higher levels of guilt and shame. DiBartolo et al. (2004) found that PS was related to maladaptive functioning when meeting high standards was a necessary condition for contingent self-worth, measured by their contingent self-worth scale. DiBartolo et al.'s finding is consistent with the aspect of Shafran et al.'s (2010) model that depicts self worth as being dependent on striving to meet high personal standards. Furthermore, a qualitative study by Riley and Shafran (2005) found that individuals with perfectionism reported themes of rigidity, avoidance, and self-criticism following failure.

The Shafran et al. (2002; 2010) model is further supported by two studies that have evaluated a psychological intervention that included a treatment component of perfectionism based on the model. Riley et al. (2007) examined the efficacy of using CBT treatment for perfectionism derived from Shafran et al.'s (2002) model in patients diagnosed with an Axis I disorder. They found that 75 percent of patients diagnosed with an Axis I disorder showed significant improvements in depressive and anxious symptomatology and in perfectionism as measured by the CPQ (Fairburn et al., cited in Riley et al., 2007), the CM and PS subscales of the FMPS (Frost et al., 1990) and SOP, SPP and OOP as measured by the HMPS (Hewitt & Flett, 1991a). With the exception of SPP and OOP, these improvements were maintained at 16-week follow up.

Further indirect support for Shafran et al.'s (2002) model was provided by Fairburn et al. (2009) who conducted a randomised controlled trial to examine the effectiveness of transdiagnostic CBT for eating disordered patients. The results found that eating disordered patients who had more complex presentations, characterised by marked levels of perfectionism, low self-esteem, interpersonal difficulties, and mood intolerance, responded significantly better to the more complex CBT treatment (which included the perfectionism component based on Shafran et al.'s model), when compared to the control group treatment and to the group that received the less complex form of CBT that focused on targeting eating disorder pathology exclusively. Both Fairburn et al.'s study and Riley et al.'s (2007) study will be described in more depth later in the treatment section of this review, along with other studies that have found CBT for perfectionism to be effective (Egan & Hine, 2008; Glover, Brown, Fairburn, & Shafran, 2007; Steele & Wade, 2008), thus providing indirect support for Shafran et al.'s (2002; 2010) model.

Shafran et al.'s (2002) model of perfectionism has received some criticism in the literature. For instance, DiBartolo, Li, and Frost (2008) point out that the empirical literature has not been consistent in supporting two key components of Shafran et al.'s model. Shafran et al. define perfectionism as a unidimensional construct that refers to the self-imposed unrelenting pursuit of high standards. This assumption is suggested as being inconsistent with the current theoretical and empirical consensus that perfectionism is best viewed as a multidimensional construct. DiBartolo and colleagues have also questioned the assumption of Shafran et al.'s model that their definition of perfectionism is best captured by subscales primarily loading on the Positive Striving factor from Frost et al. (1993), which is comprised of the PS subscale from the FMPS (Frost et al., 1990) and SOP from the HMPS (Hewitt & Flett, 1991a). DiBartolo et al. highlight that empirical research has yielded inconsistent findings pertaining to the relationship between perfectionism, as measured by the Positive Striving dimensions, and psychopathology. For example, high PS measured by the Positive Striving subscales are

not always associated with adverse clinical implications and have been found to be associated with more favourable psychological outcomes, including positive affectivity, academic motivation, success orientation, conscientiousness and greater self-efficacy (Brown et al., 1999; Cox et al., 2002; Frost et al., 1990; 1993; Frost & Henderson, 1991; Powers et al., 2005; Stober & Otto, 2006). Therefore, as the Positive Striving dimensions of perfectionism have been associated with both negative and positive psychological outcomes, it is not possible to assume that there are adverse clinical implications of setting high standards. However, Shafran et al. (2010) contend that perfectionism is only problematic when a person's self-worth is dependent on meeting high standards. That is, the setting of high standards is not problematic in and of itself. Therefore, DiBartolo et al.'s statements regarding Shafran et al.'s model (2002) assuming that there are adverse clinical implications of setting high standards are not consistent with the assumptions of the revised model of clinical perfectionism, as discussed in Egan et al (in press).

As noted by Glover et al. (2007), Hewitt et al. (2003) have also criticised the definition of perfectionism used in Shafran et al.'s (2002) model as being too highly focused on self-evaluation at the exclusion of other factors and suggested that a psychological treatment derived from this model may be "directed more toward temporary relief treatment than a treatment model oriented around lasting change" (p.1232). They suggest that if lasting change is desired from a treatment, then a 'schema-focused phase' needs to be incorporated in the model to address the developmental origins and traumatic experiences to target the interpersonal aspects of perfectionism. Hewitt and colleagues' (2003) criticism of Shafran and colleagues' model is important as it highlights that this model of perfectionism does not incorporate aetiological factors. As discussed previously, the inclusion of both aetiological and maintenance factors is important to aid assessment, case formulation and treatment planning (Cooper et al., 2004; Hawton et al., 1989). It is noted that in their recent self-help guide for perfectionism, Shafran et al. (2010) acknowledge that perfectionism may arise from many different intercorrelated factors, including parenting and temperament, however, they have not included these aetiological factors in their revised model.

In summary, many aspects of Shafran et al.'s (2002; 2010) model of clinical perfectionism have received indirect empirical support through a variety of correlational studies and research that has examined associations of dimensions in the model with psychopathology or through testing treatments based on dimensions of the model (Egan & Hine, 2008; Glover et al., 2007; Riley et al., 2007; Steele & Wade, 2008). There has been some criticism leveled at aspects of the model, primarily based on the conceptualisation of the construct used. Notwithstanding, it appears that Shafran et al.'s (2002; 2010) model represents a promising model for the maintaining factors of perfectionism. Therefore, further studies are required



that test all aspects of Shafran et al.'s (2002; 2010) model simultaneously in a large clinical population to examine whether the interrelationships between the maintaining factors operate as assumed in the model.

### **1.5.2 Slade and Owen's (1988) Dual Process Model of Positive and Negative Perfectionism**

Slade and Owen (1998) proposed a dual process model of positive and negative perfectionism based on Skinnerian reinforcement theory. In this model, they differentiated between the theoretical features that may be associated with both types of perfectionism. Positive perfectionists were described as having the goals of success, perfectionism, excellence, approval and thinness. This individual would be motivated by the desire to become as close as possible to their ideal self and would experience satisfaction, pleasure and euphoria when their goals are attained. In contrast, negative perfectionists were described as having the goals of avoiding failure, imperfection, mediocrity, disapproval and fatness. This type of individual is said to be motivated by the desire to avoid their feared self and is never satisfied when they reach their goals (which are often unattainable), as they believe failure is around the corner. In relation to eating disorders, it is hypothesised that "the positive perfectionist will pursue thinness for its own sake, while the negative perfectionist will be motivated by a desire to avoid or escape from fatness" (p. 380). Slade and Owens further suggest that two different environments are likely to result in development of positive and negative perfectionism. Positive perfectionism is thought to either develop after close identification with someone who models values of being meticulous and careful or alternatively as a reaction to someone who models disorganisation. Conversely, negative perfectionism is thought to develop in response to a complete absence of reinforcement or because of conditional reinforcement based on performance.

As with Shafran et al.'s (2002; 2010) model, no research has directly tested Slade and Owen's (1998) dual process model. However, there have been studies that have provided indirect support for the dual process model by examining measures and behaviours found to be associated with positive and negative perfectionism. DiBartolo et al. (2004) concluded that studies have consistently identified that Positive Striving subscales are reflective of positive affectivity whereas subscales loading on the MEC dimension are positively correlated with negative psychological distress (e.g., Dunkley et al., 2006; Frost et al., 1990; Frost et al., 1993; Kawamura et al., 2001). Furthermore, higher scores on the PS subscale have been associated with higher self-confidence, whereas higher scores on CM have been associated with higher anxiety (Frost & Henderson, 1991; Hall, Kerr, & Mathews, 1998; Koivula, Hassmen, & Fallby, 2002). Finally, studies have consistently found that positive perfectionists had lowered levels of anxiety, depression and higher adjustment scores,

whereas negative perfectionists had elevated levels of anxiety, depression and maladjustment (e.g., Enns, Cox & Clara, 2002; Frost et al., 1990; Rice & Dellwo, 2002).

Overall, it can be seen that a simultaneous evaluation of all components of Shafran et al.'s (2002; 2010) model and Slade and Owen's (1998) model is required. This is an important area of further research as separate studies that measure individual aspects of this model only provide information about the relationship with perfectionism and the variable under examination. Furthermore, these separate studies do not provide information about pathways in the model that may overlap or variables that have a unique relationship with perfectionism. This could be achieved by identifying an appropriate measure to represent each dimension specified in the model. These measures could then be administered simultaneously in a clinical population to allow for an examination of inter-relationships among dimensions using structural equation modeling.

Therefore it is clear that whilst substantial progress has been made with models of maintaining mechanisms of perfectionism, the same cannot be said for models including aetiological factors. It is important to have aetiological models of perfectionism in addition to maintenance models. From the research conducted hitherto, it is not possible to identify the direction of the relationship between the factor being investigated and perfectionism in any of the previous proposed models of perfectionism. Beiling et al. (2004) argue,

If perfectionism were simply a state-related variable, much like a symptom, or if it were a consequence of disorder, perfectionism could only be a correlate of disorder. Instead, theoretical and conceptual descriptions of perfectionism view the construct largely from a developmental perspective, and research confirms a connection between parenting and subsequent perfectionism (p.194).

Therefore, in order to fully understand the construct of perfectionism, both the aetiological as well as the maintaining factors must be identified and incorporated into models. An understanding of these factors would allow for further research to determine if targeting the aetiological factors of perfectionism improves treatment outcomes. This notion of understanding both aetiological and maintaining factors is in line with cognitive behaviour theory, which includes the notion of identifying and treating predisposing factors, precipitating problems and perpetuating or maintaining factors to the psychological problem (e.g., Hawton et al., 1989). The importance of understanding the aetiological factors of a psychological construct is also emphasised in a wide range of psychological orientations including psychodynamic therapy (e.g., Macwilliams, 1999), schema therapy (e.g., Young, 1999) and emotion-focused therapy (e.g., Greenburg & Bolger, 2001).

## 1.6 Treatment of Perfectionism

In psychological research, it is most often the case that theoretical models are developed as a precursory step to the development of psychological treatments. Whilst maintenance models (e.g., Shafran et al., 2002; 2010) may be used to guide the development of interventions to target the maintaining factors of perfectionism, it is also important to clearly delineate the aetiological factors and how they interact to result in the development of perfectionism. It is important to determine the developmental factors to be included in cognitive models and case formulations (Cooper et al., 2004; Hawton et al., 1989), so that further research can determine whether targeting the aetiological factors of perfectionism will improve treatment outcome.

There are three principal reasons to establish effective treatments for perfectionism. First, the construct has been strongly linked with various kinds of psychological disorders. Second, perfectionism has been identified as a maintaining factor in many disorders and therefore directly targeting perfectionism in individuals with comorbid disorders may be more beneficial than targeting the maintaining factors of single disorders (Beiling et al., 2004; Egan et al., in press). Third, perfectionism has been identified as a factor that impedes the treatment of psychological disorders. Blatt et al. (1995) examined the impact for perfectionism on 239 patients in the National Institute of Mental Health Treatment of depression. They found that perfectionism, as measured by the DAS-SC (Weissman & Beck, 1978), was found to have a significant negative relationship with all outcome measures in the four treatment conditions tested, which included cognitive-behavioural therapy (CBT), interpersonal therapy, imipramine medication, and a placebo. In later analyses of this sample, it was found that “perfectionism began to impede therapeutic gains in approximately two thirds of the sample, in the latter half of treatment, between the 9<sup>th</sup> and 12<sup>th</sup> sessions” (Blatt et al., 1998, p.423). High levels of pre-treatment perfectionism have also been correlated with a lower reduction in depressive symptoms at post-treatment and at follow-up (Blatt & Zuroff, 2005; Hawley, Ho, Zuroff, & Blatt, 2006), as well as interfering with the treatment of OCD (Frost, Novara, & Rheaume, 2002). Furthermore, Zuroff et al. (2000) found that perfectionist patients failed to develop a strong therapeutic alliance in treatment, which in turn mediated a poorer treatment response. One exception to the findings that perfectionism impedes treatment was reported by Mussell, Mitchell, Crosby, Fulkerson, Holerman and Romano (2000). They found that in a group of patients with bulimia, and high levels of perfectionism as measured by the EDI (Garner et al., 1983) did not predict factors such as treatment completion, or remission of bulimic symptoms after CBT treatment.

Overall, the research has established a strong relationship between perfectionism and psychological disorders and has identified that the construct is known to impede the treatment

of psychological disorders in most instances. It is therefore interesting that there is limited research on the treatment of perfectionism. The psychological literature on treatment includes a mix of interesting clinical case studies that have been described from a range of psychological orientations, as well as some empirically validated interventions. The following represents a review of the literature on the treatment of perfectionism.

### **1.6.1 Treatment of Perfectionism in Non-Clinical Samples**

Treatment of perfectionism using a cognitive behavioural orientation has consistently been found to be effective in nonclinical samples. Di Bartolo, Dixon, Almodovar and Frost (2001) compared the use of brief cognitive restructuring versus distraction to address perfectionism in an experimentally induced public speaking experiment with 60 female undergraduate students. Students who rated higher on CM on the FMPS (Frost et al., 1990) reported significantly more distress about the task. It was found that cognitive restructuring was effective in reducing anxiety for students scoring both high and low on CM in comparison to using the distraction treatment. However, this study had several limitations. The students only received eight minutes of cognitive therapy, which is markedly lower than the 8-12 sessions of one hour long CBT used in most comparable studies (e.g., Riley et al., 2007). Furthermore, all of the students were female, and there was no follow-up data.

Further support for the use of CBT treatment is provided by Wilksch et al. (2008) who compared the efficacy of an eight-week perfectionism program with a media literacy program as an intervention for reducing eating disorder risk with 127 adolescent students. They found that neither program was successful in reducing concerns over shape and weight, however, the perfectionism program resulted in significant reductions in perfectionism as measured by the CM and PS subscales of the FMPS (Frost et al., 1990). It was found that high-risk students appeared to benefit the most from the perfectionism program. The authors further noted an improvement in self-esteem variables on the perfectionism program and concluded that the findings provide further evidence for the inclusion of a perfectionism treatment component in eating disorder interventions. However, this study had some notable methodological limitations including the lack of a measurement tool to assess eating disordered behaviour, and a follow-up of three months as opposed to the recommended six-month follow-up period for eating disorder interventions (Wilksch et al., 2008). Also the use of a wait list control group as opposed to a placebo intervention group precludes the results being attributed solely to the intervention.

Kutlesa and Arthur (2008) also provided evidence for an eight week combined CBT and interpersonal intervention on the treatment of perfectionism in university students. Significant decreases in measures of SOP, SPP and OOP were evident in post-test compared to pre-test

scores. Furthermore, decreases in depression and anxiety were also noted for this group, as measured by the BDI-II (Beck et al., 1996) and BAI (Beck & Street, 1993) respectively. These differences in perfectionism and psychological distress were not observed for two control groups who attended either career planning sessions or psychology classes. Limitations of the study included the relatively small number of 30 participants in each group, the participants not being randomly allocated to the interventions, and no follow up data being reported.

Arpin-Cribbe, Irvine, Ritvo, Cribbe, Flett and Hewitt (2007) assessed the effectiveness of different types of web-based intervention as a means of decreasing perfectionism and psychological distress in a non-clinical sample. Participants either received no treatment, a general stress management intervention or the stress management intervention with an added CBT intervention for a 10-week period. Structural equation modeling found that higher levels of psychological intervention predicted greater improvements in psychological distress and perfectionism, as measured by SOP, SPP and OOP. It was concluded that the CBT intervention improved perfectionism over and above the provision of the general stress management intervention.

Finally, Kearns, Forbes and Gardiner (2007) examined the efficacy of using a modified form of CBT, known as cognitive behavioural coaching, to reduce perfectionism in 28 university students. They found a significant reduction in perfectionism as measured by the Perfectionism Cognitions Inventory (Flett et al., 1998) and the CM and PS subscales on the FMPS (Frost et al., 1990). These scores were evident at the conclusion of the six-week program and maintained at a one-month follow-up. Limitations of the study included having no control group, a small number of participants, and a short time frame for follow-up.

### **1.6.2 Descriptive Studies in the Treatment of Perfectionism**

Whilst perfectionism has been noted as a recurring theme in clinical case studies over the past century, Burns (1980) is credited for being the first to actually describe cognitive behavioural treatments for the construct. He included a section on strategies to overcome perfectionism in his self-guide for depression. Shortly afterwards, Barrow and Moore (1983) described ideas on how to apply cognitive behavioural techniques to perfectionism in a group context, however no empirical data was provided. Antony and Swinson (1998) also wrote a self-help manual to assist people in changing their perfectionism. Efficacy for this manual has been provided by Pleva and Wade (2007), who found that self-help and guided CBT was effective in reducing perfectionism, anxiety and depressive symptoms in a non-clinical sample.

Case studies that have been written from a range of psychological orientations have

contributed to the literature on treatment of perfectionism in rich clinical detail. Fredtoft et al. (1996) described short-term psychodynamic group psychotherapy for university students. The treatment focused on encouraging free-floating discussion by selectively attending to comments regarding perfectionism and dependency. The therapy focused on using the group process to connect internal conflicts with the perfectionist behaviours that were occurring in the participants outside world. Greenburg and Bolger (2001) also described an emotion-focused treatment approach for a client with perfectionism. They used the principles of promoting emotional awareness, learning to regulate emotional arousal and learning to change the maladaptive emotion with a healthier, adaptive emotion. Sorotzkin (1998) also reported using a psychodynamic approach to treat perfectionism in adolescents.

As mentioned, case studies have described using CBT as a treatment for perfectionism. Hirsch and Hayward (1998) reported that combining specific techniques for targeting perfectionism in combination with CBT were effective in reducing the perfectionist beliefs that maintained a client's symptoms of depression and anxiety. Similarly, Shafran, Lee, and Fairburn (2004) described a case study that used CBT treatment to target perfectionism in a female client with a binge eating disorder. It was noted that following treatment, the client reported a marked decrease in bulimic symptoms, a reduction in Beck Depression Inventory scores (Beck et al., 1961) and a reduction in perfectionism, as measured by the CPQ (Fairburn et al., cited in Riley et al., 2007). These reductions were maintained at a two and five-month follow up.

The case studies from a range of psychological orientations provide interesting clinical descriptions of the treatment of the construct. However, by the nature of this design, they provide descriptions of single case examples. Therefore no generalisations can be made from these studies. In addition, with the exception of the paper by Shafran et al. (2004), these case studies did not provide empirical evidence as to the efficacy of the treatments and did not use a control group. Therefore, it is not possible to say the intervention provided the only explanation for the improvement in perfectionism as alternate explanations include other extraneous variables, such as the therapeutic relationship. Given these methodological limitations, these findings may be thought of as preliminary findings that require larger controlled trials to determine the efficacy of treatment for perfectionism (Egan & Hine, 2008).

### **1.6.3 Clinical Interventions in the Treatment of Perfectionism.**

A small number of studies have investigated the treatment of perfectionism in clinical populations. Most of these studies have been conducted in the past decade, which is encouraging as it suggests that perfectionism treatment is becoming an area of increasing

interest. The first study was conducted by Ferguson and Rodway (1994), who used a single case experimental design series, to investigate the use of CBT treatment of perfectionism on nine clients in a social work setting. Reductions in perfectionism, as measured by the Burns Perfectionism Scale (Burns, 1980), were reported for the majority of clients. However, there are several limitations of this study that make it difficult to assess the efficacy of this treatment. These limitations include omission of a control group, no provision of details about the treatment, no calculation of clinical significance of the data and the use of a subjective measurement of perfectionism (Egan & Hine, 2008).

More recently, Glover et al. (2007) found further support for the use of CBT as a treatment for perfectionism in a preliminary case series evaluation using nine patients with either an anxiety disorder or depression. They found significant improvements in perfectionism for six of the nine participants as measured by SOP, the CPQ (Fairburn et al., cited in Riley et al., 2007) and the DAS-SC (Weissman & Beck, 1978). These improvements were maintained at three-month follow up. However, no significant improvements were noted on the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) and only three out of nine participants had a significant reduction in depression symptoms measured by the BDI-II (Beck et al., 1996). The authors also noted that the baseline periods for participants ranged between six to 43 days, making it difficult to interpret baseline data.

Using a similar methodological design to Glover et al. (2007), Egan and Hine (2008) examined the effectiveness of treating perfectionism using a CBT intervention through a single case experimental design series on four adults diagnosed with either a depression or an anxiety disorder. This study used an A-B single case design and provided eight sessions of CBT therapy to target perfectionistic thinking and behaviours, with a two-week follow-up session. Significant decreases in perfectionism were found, as measured by the total perfectionism score on the FMPS (Frost et al, 1990), were found in two out of the four patients. These scores were maintained at follow-up. More specifically, significant reductions were noted on the CM subscale for three out of the four patients, whereas, no significant changes in Personal Standards subscale were noted for any participants. However, no reductions were evident in anxiety or depressive symptomatology. As noted by Egan and Hine, research employing a case series design may be seen as preliminary findings on the efficacy of CBT treatment for perfectionism and require a larger controlled trial with a longer follow-up period to assess the reliability of this intervention.

As discussed in the previous section on perfectionism and psychopathology, there are a growing number of researchers who view perfectionism as a transdiagnostic issue that operates across many psychological disorders, as opposed to one specific disorder (e.g., Bulik

et al., 2004; Egan et al., in press; Fairburn et al., 2003; Halmi et al., 2005; Milos et al., 2004, Sassaroli et al., 2008). Fairburn and colleagues (2003) proposed a transdiagnostic theory of eating disorders that asserts that perfectionism is one of four key precipitating and maintaining factors that lead to the development about concerns over weight and shape and ultimately result in dietary restrictions and disordered eating behaviours seen across all eating disorders.

Fairburn and colleagues (2003) have developed an enhanced form of CBT that targets complex forms of eating disordered behaviour that includes addressing perfectionism as a key component. The key elements in Fairburn et al.'s (2003) treatment of the construct include assisting the client to identify perfectionism and its maintaining factors as a problem, conducting behavioural experiments to highlight the problematic nature of perfectionism and the possible differences that could occur if the construct were modified, provision of psycho-education and cognitive restructuring to modify maintaining thoughts for perfectionist thinking, and assisting the individual to broaden their self-evaluation by modifying their thinking pertaining to their self-concept.

Fairburn et al. (2009) performed a randomised controlled trial for transdiagnostic CBT with 154 patients diagnosed with an eating disorder. When compared to a wait list control group, they found significant decreases in eating disordered behaviours across all types of eating disorders that were maintained at the 60-week follow up, as measured by ratings by independent assessors and the Eating Disorder Examination (EDE; Fairburn, Cooper & O'Connor, 2008). Fairburn et al. (2009) found that eating disordered patients with marked levels of perfectionism, mood intolerance, interpersonal difficulties and low self-esteem responded better to the more complex CBT (that included the perfectionism treatment component, CBT-E) when compared to patients with lower levels of perfectionism. The CBT-E was also found to be a more effective version of treatment compared to traditional CBT for patients with bulimia. That is, CBT-E broad was more effective for patients with more complex issues, however, for those patients who did not have the additional maintaining mechanisms, CBT focused was more effective.

Riley et al. (2007) also provided evidence for the efficacy of a CBT treatment for perfectionism in a randomised trial using the treatment component derived from Shafran et al.'s (2002) model. It was found in comparison to the wait list control group, 75 percent of patients diagnosed with an Axis I disorder showed significant improvements in perfectionism as measured by the CPQ (Fairburn et al., cited in Riley et al, 1997), the CM and PS subscales of the FMPS (Frost et al., 1990) and SOP as measured by the HMPS (Hewitt & Flett, 1991). These improvements were maintained at 16-week follow up. There were also significant



decreases in SPP and OOP that were maintained at eight week follow up, but not at the 16-week follow up. In addition, a significant reduction was found on BDI-II (Beck et al., 1996) scores. Significant reductions were noted on the BAI (Beck et al., 1988) and Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) at post treatment and eight week follow up, however, these gains were not maintained at the 16-week follow up. Riley et al. (2007) acknowledge that the limitations of their study were the small sample size of 20 patients, and that the sample was mostly comprised of females. They further note that the use of a wait list control group as compared to a comparison group to control for non-specific effects does not allow conclusions to be drawn that the changes observed were specific to the treatment intervention.

Steele and Wade (2008) also found that CBT for perfectionism was effective in treating patients with bulimia nervosa or eating disorders not otherwise specified. Three intervention groups were compared, including CBT for perfectionism (consisting of eight sessions of guided self-help), CBT for bulimia (without the perfectionism component) and a form of mindfulness. The findings indicated that all three interventions were equally effective in reducing bulimic behaviours, as well as anxiety and depression, which were not directly targeted. However, similar to the findings of Riley et al. (2007), these gains were not well maintained at follow-up, as 81% of the patients who had completed treatment had resumed binge eating episodes and weight control behaviours.

#### **1.6.4 Summary of Treatments for Perfectionism**

Overall it can be seen that the findings from preliminary case series evaluations and randomised controlled trials provide growing empirical evidence to support that CBT is an effective treatment for perfectionism in both clinical and non-clinical populations. In these cited studies, CBT has been found to decrease levels of perfectionism across several measures, including the FMPS (Frost et al., 1990) and the HMPS (Hewitt & Flett, 1991a). There is also evidence that targeting perfectionism as a key treatment component in transdiagnostic treatments may be effective in reducing symptoms associated with a range of Axis 1 disorders (Egan et al., in press).

Further research needs to be conducted to assess the long-term effectiveness of CBT as some studies in clinical populations have found that some of the gains made from CBT for perfectionism were not maintained for the majority of their sample (e.g., Steele & Wade, 2008; Riley et al., 2007). Mixed findings have also been found as to whether CBT for perfectionism is an effective treatment for anxiety and depression, with some studies finding no significant improvements (Egan & Hine, 2008) and some studies observing an initial improvement that was not maintained at longer-term follow-up (Glover et al., 2007; Riley et

al., 2007; Steele & Wade, 2008). It is noted that Fairburn et al. (2009) observed significant decreases in eating disorder behaviour that were maintained at follow-up, however, several components in addition to CBT for perfectionism were used in this intervention. It is clear, therefore, that further research is needed to evaluate the longer-term efficacy of CBT for perfectionism. These initial treatment findings also raise an interesting research question as to whether longer-term treatment efficacy of perfectionism can be improved by targeting both maintaining mechanisms and aetiological factors.

Further research is also needed to explore targeting perfectionism as both a construct associated with specific psychological disorders as well as a transdiagnostic issue that may precipitate and/or maintain psychological disorders. To do this, further randomised controlled trials are required that compare CBT with perfectionism with other active treatments to a wait-list control group in clinical populations across a wide range of psychological disorders.

### **1.7 Aetiological Factors in the Development of Perfectionism**

Given the strong consensus that perfectionism has been associated with a wide range of psychological disorders and that it is theorised to be a maintaining factor for psychopathology, it is important to review the aetiological factors that have been identified as salient in the development of the construct. Identifying these aetiological factors is of particular importance if treatments are to be developed and tested that target both the maintaining and aetiological factors of perfectionism to try and effect longer term change.

Several aetiological factors in perfectionism have been identified, including genetic factors, parenting factors, personality factors and cognitive factors. These factors have been studied separately and have not yet been integrated into a multidimensional aetiological model of perfectionism that has been empirically validated. This is perhaps surprising given the literature, as drawing together the separate lines of research on perfectionism into one preliminary model would be more in line with the widely accepted multidimensional construct of perfectionism. Flett et al. (2003) did develop a preliminary model of perfectionism, which will be described later in this section, however, that model does not include all of the aforementioned aetiological factors, and has not been empirically validated. Understanding the relationships between the aetiological factors of perfectionism may promote a more comprehensive understanding of the construct itself. A more comprehensive knowledge of the construct may in turn be useful in informing future research into treatment of perfectionism.

### 1.7.1 Genetic Factors as Aetiological Factors of Perfectionism

There are four studies that have found an association between familial transmission and perfectionism (Lilenfeld et al., 2000; Tozzi et al., 2004; Wade, Tiggeman, Bulik, Fairburn, Wray, Martin, 2008; & Woodside et al., 2001). These findings are in line with several well-established general models of anxiety, such as the triple vulnerability model for the development of anxiety disorders proposed by Barlow (2002). This model asserts that the combination of a person's generalised biological vulnerability and early life experiences can, under particular circumstances; result in a psychological vulnerability to develop into anxiety and other emotional disorders. This model and others like it are based on a strong consensus that have identified a substantial genetic component with various specific disorders and temperaments characterised by anxiety, negative affect and neuroticism (e.g., Andrews et al., 1990; Clark, Watson, & Mineka, 1994; Chorpita & Barlow, 1998; & Kendler, 1996).

Tozzi et al. (2004) directly investigated the genetic structure of perfectionism in a study with 1022 monozygotic and dizygotic female twins. Perfectionism in this study was measured by three of the subscales on the FMPS (Frost et al; 1990), CM, PS and DA. It was concluded through path analysis that perfectionism is moderately heritable. However, not all of the dimensions of perfectionism were found to be of equal heritability. It was found that "CM appears to be the driving construct: CM is highly correlated with both PS and DA, and seems to behave as a bridge between the other two dimensions" (p. 490). Tozzi et al. suggest that the pattern of familial resemblance for the different dimensions of perfectionism, as measured by the FMPS, is complex and therefore confirms perfectionism is a multidimensional construct and is not well characterised or measured by a unidimensional factor. Therefore, the authors advised against using the total FMPS score as a measure of perfectionism due to the conclusion that the subscales appear to only be partially overlapping and representative of different environmental and genetic aetiological factors. Tozzi et al. noted a few limitations of their study, including that the sample was predominantly composed of Caucasian females, perfectionism was measured by a sub-set of the FMPS scales and not the original full scale and that statistical power may have influenced their ability to choose the model of best-fit in the analysis.

Further evidence of a familial relationship in perfectionism was provided by Lilenfeld et al (2000) whom examined personality traits in first-degree female relatives of patients diagnosed with bulimia versus a control group. They found that relatives of bulimic patients who had no eating disorder history had significantly higher levels of perfectionism, interpersonal distrust, and ineffectiveness when compared to relatives of control participants, who had also never had an eating disorder. They concluded that as perfectionism was transmitted independently of having an eating disordered familial history, this provides

support that perfectionism may have a genetic component which may be important in understanding the aetiology of bulimia.

Furthermore, Woodside et al. (2002) examined perfectionism in parents of individuals with eating disorders compared to parents of individuals with healthy eating patterns. They found that mothers of individuals with eating disorders had elevated levels of perfectionism as measured by the FMPS (Frost et al., 1990), with significantly higher scores on CM and PC, when compared to the control group. Elevated concerns regarding weight and shape, as measured by the EDI (Garner et al., 1983), were also found in the mothers of individuals with eating disorders compared to normal controls. Woodside et al. (2002) concluded that perfectionism might cluster in families of individuals with eating disorders. They further suggested that perfectionism may be transmitted through families and may make a person vulnerable to developing anorexia.

Wade et al. (2008) investigated which traits shared transmitted liabilities with patients with anorexia nervosa in a community sample of 1022 same gender female twins. It was found that certain temperaments were comorbid with anorexia nervosa and included having higher levels of perfectionism as measured by CM, PS and DA, a higher need for organisation, and a sensitivity to reward and praise. The authors concluded that the nature of these shared temperamental risk factors was likely to be partly genetic.

It is important to note that unlike Tozzi et al. (2004), the research of Lilenfeld et al. (2000), Wade et al. (2008) and Woodside et al. (2002) did not use path analyses to reach their conclusions. Therefore, as stated by Woodside et al. (2002), two other conclusions are possible from their findings. First, it may be that parental perfectionism was passed down to the offspring generation through modeling and hence environmental factors may be responsible for the development of the eating disordered behaviour reported. Second, one cannot eliminate the conclusion that it is possible that pervasive perfectionist behaviour in the offspring may contribute to perfectionist tendencies in the parents, and therefore may have a bidirectional influence that would be considered environmental and not genetic (see Kendler, 1990).

Overall the findings of Lilenfeld et al. (2000), Wade et al. (2008), Woodside et al. (2002) and especially Tozzi et al. (2004) are consistent with the theories of generalised anxiety that perfectionism could have a genetic component that when combined with certain environmental factors increase the likelihood of experiencing negative emotional states. It is therefore important to review the literature that has examined other aetiological factors associated with perfectionism, to identify what these environmental factors may be.

### **1.7.2 Parenting Factors as Aetiological Factors of Perfectionism**

Research has predominantly focused on parenting factors as the main causal factor in the development of perfectionism. There is a strong consensus that the construct originates from experiencing parenting that is perfectionistic and demanding (Frost et al., 1991). In a comprehensive review of the literature on perfectionism, Flett et al. (2002) identified five main parenting factors that appeared to be associated with the development of perfectionism: (i) behavioural reinforcement; (ii) modeling; (iii) family environment; (iv) bonding; and (v) attachment. The research that has found support for these five parenting factors will now be reviewed. It is noted that many of these parenting factors are related constructs.

#### **1.7.2.1 Behavioural reinforcement, modeling and family environment**

There has been strong theoretical and empirical support for the association between perfectionism and the parental relationship that occurs through behavioural reinforcement and modeling in the family environment. The social expectations model suggests that perfectionism develops in response to contingent parental approval. That is, the child learns that if they are perfect, they gain parental approval (Missildine, 1963). Similarly, Hamachek (1978) described the parenting environment associated with subsequent development of perfectionism to be one where parental approval is contingent on the child's performance. The child receives consistent messages that a certain level of performance is required in order to be approved of and loved by the parent. Hollender (1965) also noted that ongoing parental approval is sought from the perfectionist who believes "If I try a little harder, if I do a little better, if I become perfect, my parents will love me" (p.98). Research has demonstrated that feedback from parents that focuses on the child's attributes rather than on the achievement process promotes a sense of contingent self-worth (Kamins & Dweck, 1999; Mueller & Dweck, 1998).

The social learning model proposes that children will have a tendency to imitate their perfectionist parents (Flett et al., 2002). Bandura and Kupers (1964) found that children who were exposed to models who rewarded themselves only after meeting high standards (as opposed to those who rewarded themselves for meeting lower standards) were likely to imitate a similar type of self-reinforcement. Research evidence suggests that the role of imitation in parenting may be specific to modeling of the construct by parents of the same gender. That is, levels of perfectionism in mothers and daughters were found to be significantly positively correlated when measured by the FMPS (Chang, 2000; Frost et al., 1991a; Vieth & Trull, 1999). Vieth and Trull (1999) also found that the HMPS (Hewitt & Flett, 1991a) subscale of SOP was significantly correlated between fathers and sons. No

significant association was found between perfectionism in fathers and daughters (Frost et al., 1991; Vieth & Trull, 1999). In fact, a negative correlation has been found between SOP in fathers and daughters (Vieth & Trull, 1999). However, daughter's perceived harshness of the father has been found to be associated with perfectionism in daughters (Frost et al., 1991). Similarly, using a qualitative interview design, Neumeister (2004a) examined factors that were believed to contribute to the development of perfectionism in first year honours university students. Findings indicated that factors including modeling of parental perfectionism and mastery of early academic studies with little effort without experiencing academic failure contributed to the development of SOP, as measured by Hewitt and Flett's HMPS (1991a). It was also found that factors including modeling of parental perfectionism, authoritarian parenting styles, fear of disappointing others and self-worth that was linked to achievement was reported as contributing to the development of SPP. Similarly, case studies of treatment of perfectionism have also noted that the patients attributed their perfectionistic standards to having perfectionistic and demanding parents (Berlin, 1985; Sorotzkin, 1998).

In addition, research has also focused on the particular type of family environments that may contribute to the development of perfectionism in children. A qualitative study conducted by Slaney and Ashby (1996) found that 81 percent of perfectionists believed that their perfectionism came from their parents, and the remainder of the participants believed that their perfectionism came from their grandparents, siblings or themselves. Women who reported high levels of perfectionism and were diagnosed with eating disorders were from families with high levels of family perfectionism and paranoid characteristics (Head & Williamson, 1990) and families that were high in conflict, control and achievement orientation (Brookings & Wilson, 1994), as rated by the Moos Family Environment Scale (Moos & Moos, 1994). High levels of perfectionism, as measured by the DAS-SC (Weissman & Beck, 1978), have also been associated with maternal rejection, shaming, and lack of affection as well as lower paternal tolerance and greater paternal overprotection (Richter et al., 1994). Perfectionism in women has also been found to be associated with low emotional warmth from parents, as measured by the Own Memories Concerning Upbringing questionnaire (EMBU; Richter et al., 2000).

Similarly, Kawamura, Frost and Harmatz (2002) also found that reports of authoritarian and harsh parenting styles were associated with maladaptive, but not adaptive perfectionism in two samples of Caucasian-American male and female students, and in Asian-American women. In this study, maladaptive perfectionism was defined as having elevated scores on the FMPS (Frost et al., 1990) subscales of CM and DA. Adaptive perfectionism was defined as an elevated score on the PS subscale.

Overall, it appears that the literature has consistently theorised and identified a strong relationship between parental modeling and reinforcement, and perfectionism. Parental approval and love that is contingent on meeting high standards is also believed to link with a contingent sense of self-worth. Whilst the conclusions in this area are consistent, there are some noteworthy limitations in the methodology employed in these studies. These designs have employed either qualitative or correlational designs. Therefore, it cannot be concluded from these designs that there is a causal relationship between parental modeling and behavioural reinforcement and the subsequent development of perfectionism. To affirm this causal relationship a longitudinal design is required. When a longitudinal design is prohibitive, the design could instead employ statistics in the form of structural equation modeling to make inferences regarding the direction of the relationship between the variables.

### **1.7.2.2 Parental bonding and attachment**

Parental bonding is the factor most consistently identified as being related to perfectionism. In relation to parental bonding, two major aspects of parenting behaviours have been consistently identified in the parent-child literature (1) Care, which is thought to promote bonding and (2) Protection, which is thought to interfere with bonding when overprotection occurs (Arrindell et al., 1998; Parker, Tupling, & Brown, 1979). Research on perfectionism and parental bonding using the Parental Bonding Instrument (PBI: Parker et al., 1979) has identified a strong association between perfectionism and ‘Affectionless Control’ (Enns et al., 2000; Stoeber, 1998). Affectionless Control refers to a combination of parental indifference/rejection (low Care) and Protection (Authoritarian Control). From this definition, it can be seen that parental bonding may be a related construct to parental modeling and reinforcement.

Stoeber (1998) found that Affectionless Control, as measured by the PBI (Parker, 1984), was significantly correlated with the Parental Expectations and Criticism subscale as measured by the FMPS (Frost et al., 1991). Enns et al. (2000) also found that overprotection by fathers was significantly associated with depression and that the CM subscale of the FMPS, SPP (Hewitt & Flett, 1991) and neuroticism mediated this relationship in men. In women, depression was associated with lack of maternal care and this relationship was mediated by CM, SPP and self-criticism. Parker (1993) also found that in patients with depression, lack of maternal care, measured by the PBI, was significantly associated with low self-esteem and perfectionistic dysfunctional attitudes, as measured by the DAS (Weissman & Beck, 1978). However, in this study these variables were not found to mediate the relationship between parental rearing style and depression.

Affectionless Control is also consistent with the term ‘Psychological Control’ that is used in the parenting literature. Psychological Control is defined as a parenting style that focuses primarily on their own emotional problems and psychological needs, and has an authoritarian relationship with the child characterised by the love withdrawal and guilt induction to pressure the child to comply with their personal standards (Barber, 1996; Schaefer, 1965; Soenens, Elliot, Goossens, Vansteenkiste, Luyten, & Duriez, 2005). Psychological Control is also consistent with the behavioural reinforcement theories described earlier (e.g., Hamachek, 1978). Parent’s Psychological Control has been found to be associated with several adverse outcomes in late adolescence, including externalisation of behavioural problems, depression, anxiety and low self-esteem (Barber & Harmon, 2002).

Findlay and Watts (1998) found that total perfectionism, as measured by the FMPS (Frost et al., 1990), was found to be associated with a measure of parental Psychological Control. Furthermore, Soenens et al. (2005) found that maladaptive perfectionism significantly predicted parent’s development of Psychological Control, when using the FMPS (Frost et al., 1990) subscales of CM and DA. Soenens et al. (2005) examined Psychological Control as an intervening variable in the intergenerational transmission of perfectionism in 155 female Belgian university students. Parental love withdrawal was considered to be one aspect in the construct of parental Psychological Control in their research. Using structural equation modelling, they found that Psychological Control played a mediating role in the relationship between both parents’ and daughters’ maladaptive perfectionism. They observed a direct link only between mothers’ and daughters’ maladaptive perfectionism, however no such direct link was observed between fathers’ and daughters’ maladaptive perfectionism. Therefore, they concluded that despite father-daughter intergenerational transmission of perfectionism being less directly evident than that between mothers and daughters, in both relationships, parental psychological control appeared to be a significant intervening variable. One of the main interpretations for the data proposed was that parents could apply their own sense of contingent self-worth on the achievement of personal goals to their children. Therefore, parental love and acceptance is provided only when maladaptive perfectionistic parenting expectations are met. This research has some notable limitations in that the sample contained students and only considered the mothers, which limits the generalisability to clinical populations and fathers. Therefore, further research using a clinical sample of mixed gender and a wide age range is required to extend the generalisability to clinical samples.

In a follow up study, Soenens et al. (2008) used a longitudinal design to further examine the relationship between parental Psychological Control and maladaptive perfectionistic parenting. They found that parental Psychological Control used with the same 15-year-old female sample, predicted increased levels of maladaptive perfectionism one year later. In



turn, maladaptive perfectionism predicted higher levels of depressive symptoms one year later. This study is important as a prospective design was used which has the advantage of allowing conclusions regarding the direction of the relationship between parenting variables and perfectionism to be drawn, whereas other studies in this area have used correlational designs.

Rice, Ashby, and Preusser (1996) examined perceptions of parental bonding in maladaptive (neurotic) and adaptive (normal) perfectionists, as defined on the basis of median cutoff scores on the FMPS (Frost et al., 1990). They found that maladaptive perfectionists reported parents to be significantly more demanding and critical than adaptive perfectionists did. However, unlike other studies, they found no differences in retrospective accounts of parental bonding between maladaptive and adaptive perfectionists and parental bonding, as measured by the PBI (Parker et al., 1984).

Finally, a small body of literature has examined perfectionism and attachment styles and has consistently found an association with insecure attachment. This finding has been demonstrated between the perfectionism factor on the Eating Disorder Inventory (EDI; Garner et al., 1983) and measures of avoidant and insecure attachment (Brennan & Shaver, 1995). A strong association has also been found between perfectionism measured by the DAS (Weissman & Beck, 1978) and the various measures of insecure attachment as measured by the Attachment Style Questionnaire, such as need for approval and relationship pre-occupation (Andersson & Perris, 2000). Rice and Mirzadeh (2000) also found that attachment styles were predictive of types of perfectionists, where adaptive perfectionists were defined as students with elevated scores on PS and O scales of the FMPS (Frost et al., 1990) and maladaptive perfectionists defined as students with elevated scores on the subscales of CM, DA, PC and PE. They found that adaptive perfectionists reported more secure attachment to both parents than maladaptive perfectionists did.

With the exception of the research conducted by Soenens et al. (2005; 2008), these findings relating to parental bonding and attachment styles need to be interpreted with some caution given that participants retrospective reports are subject to memory biases and were not compared to parental reports of attachment. This issue further highlights the need for research in the area of perfectionism and parenting to extend beyond correlational studies and use structural equation modeling or longitudinal studies so that directionality can be concluded.

In summary, the research indicated that parenting factors are strongly associated with the development of perfectionism. The evidence has consistently found an association between

perfectionism and a lack of bonding as well as an insecure attachment. Furthermore, a strong relationship between perfectionism and a perfectionist family environment has been found, with critical parents, high parental expectations and parental modeling of perfectionist behaviour all found to have an association with perfectionism. It appears that the most salient parenting variable to be identified in the perfectionism literature is parental bonding. That is, research using a variety of multidimensional measures of perfectionism consistently identified a strong association between a combined lack of Care and (over) Protection, as termed 'Affectionless Control', on the PBI (Parker, 1984).

The research on parental bonding has utilised some causal as well as correlational designs to infer that there may be a mediating relationship between parental bonding and perfectionism. However, a variety of mediating factors have been identified in this relationship based on the differing factors under investigation. Enns et al. (2000) found that perfectionism was a mediating factor in the relationship between parental bonding and depression in a clinical population. In contrast, Soenens et al. (2005) found that parental bonding was the mediating variable between parents' and (adult) children's levels of perfectionism in a student sample. Thus, whilst parental bonding has been identified as the most salient factor in relation to perfectionism, further research is required using a large clinical sample to determine the exact mediating variables in its relationship with perfectionism. Further research should include other salient factors that have been identified as influential in the development of perfectionism when trying to determine the role of mediating relationships. This is important as both Enns et al.'s and Soenens et al.'s studies did not control for the influence of possible extraneous variables, such as contingent self-worth, which has been theorised to affect the parent-child relationship (e.g., Elliot & Thrash, 2004).

### **1.7.3 Personality Factors as Aetiological Factors of Perfectionism**

Perfectionism is widely perceived to be a long-standing personality trait that precedes the development of numerous psychological disorders (Blatt, 1995). More specifically, several authors contend that the personality trait of neuroticism is one of the key features that leads to the development of perfectionism (e.g., Burns, 1980; Freud, 1965; Pacht, 1984; Sorotzkin, 1984). Costa and McCrae (1992) define neuroticism as the extent to which people are sensitive and nervous versus being secure and confident. Adler (1956) and Hamachek (1978) stated that perfectionism develops, in part, from anxiety and self-doubt regarding one's self-concept, and in particular a fear of failure and a need to please significant others. Surprisingly, despite the widely held notion that there is a strong relationship between perfectionism and neuroticism, relatively few studies have explored the relationship between perfectionism and models of personality and their corresponding measures. Perhaps more importantly, no studies have used methodological designs that allow domains of personality

to be directly examined as possible aetiological factors for the development of perfectionism.

In an early theory of personality, Eysenck (1970) proposed that Neuroticism, Extraversion and Psychoticism were the key constructs that contributed to the development of personality in an individual. Based on this theory, the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) was developed. A few studies have examined the relationship between perfectionism and personality, as measured by the EPQ. Hewitt et al. (1991) and Magnusson, Nias and White (1996) found a significant positive correlation between Neuroticism and perfectionism. More specifically, Magnusson et al. found a significant positive correlation between Neuroticism and the FMPS (Frost et al., 1990) subscales of DA, CM and PE in a sample of nurses. When perfectionism was measured by the HMPS (Hewitt & Flett, 1991a), Hewitt et al. found a significant positive correlation between SPP and Neuroticism in both male and female psychiatric patients and college students. Interestingly, a positive correlation was found between SOP and Neuroticism in female but not male students and patients. Contrary to these findings, Slade et al. (1991) only found a negative correlation between Psychoticism, and not a positive correlation between Neuroticism, and perfectionism as measured through a subscale of the SCANS (Slade & Dewey, 1986).

### **1.7.3.1 Perfectionism and the five-factor model of personality**

More recently, the majority of the research examining perfectionism as a personality trait has been studied through the five-factor model of personality (Costa & McCrae, 1992), which is one of the most widely accepted models of normal personality structure (Hill et al, 1997). This model is a trait theory of personality that has identified five broad domains: Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. Costa and McCrae provided definitions for each of these factors. Extraversion refers to the extent to which people are shy and withdrawn versus being outgoing and energetic. Openness to Experience is described as the extent to which people are curious and inventive versus conservative and cautious. Agreeableness is the extent to which people are competitive and outspoken versus being compassionate and friendly. Conscientiousness is the extent to which people are careless and easy-going versus being organised and efficient. Neuroticism was defined earlier in this section. On the basis of this model, Costa and McCrae developed the NEO-PI-R, which is a 240-item questionnaire measuring the facets associated with each personality domain and later a 60-item shortened version called the NEO-FFI.

The literature has consistently found that the personality factor of Neuroticism, as measured by questionnaires based on the five-factor personality model, is positively correlated with perfectionism (Dunkley, Blankstein, & Flett, 1997; Dunkley et al., 2004; Dunkley et al, 2006; Hill et al., 1997; Rice, Ashby, & Slaney, 2007; Stumpf & Parker, 2000; Zuroff, 1994).

Neuroticism was found to be significantly positively associated with perfectionism, as measured by the DAS-SC (Weissman & Beck, 1978) in two separate studies of students (Dunkley et al.; 1997; Zuroff, 1994) as well as in a clinical sample of patients with a range of diagnoses (Dunkley et al., 2004). Hill et al. (1997) also found moderate positive correlations between Neuroticism and SOP and SPP, as measured by the HMPS (Hewitt & Flett, 1991a). In a factor analysis, Dunkley et al. (2006) also found a unique positive relationship between Neuroticism and Self-Critical Perfectionism (SCP: a factor composite consisting of solitude, self-criticism and SPP subscale of the HMPS). Stumpf and Parker (2000) also found a significant positive relationship between Neuroticism and the FMPS (Frost et al., 1990) perfectionism subscales of CM and DA. Finally, Rice et al. (2007) also found that Neuroticism had a significant association with the APS-R Discrepancy subscale (Slaney et al., 1995). This subscale is thought to compare favourably to other perfectionism subscales that are considered to represent maladaptive aspects of perfectionism, such as the FMPS subscales of CM and DA (Dunkley et al., 2006; Enns & Cox, 2002; Stumpf & Parker, 2000).

Research investigating the personality factor of Conscientiousness has yielded mixed findings, with results appearing to be dependent upon the measure of perfectionism used. A positive relationship between Conscientiousness and perfectionism has been found when measured by the SOP scale of the HMPS (Hill et al., 1997) and the FMPS (Frost et al., 1990) subscales of PS and O, but not with the subscales of CM, DA, PC and PE (Stumpf & Parker, 2000). Similarly, Rice et al. (2007) found that Conscientiousness was significantly correlated with the APS-R (Slaney et al., 1995) subscales of Order and High Standards. The subscales are thought to compare favourably with the FMPS subscales of PS and O, which are considered by some authors to represent the more achievement striving aspects of perfectionism (e.g., Enns & Cox, 2002; Stumpf & Parker, 2000). Dunkley et al. (2006) also found that Conscientiousness was strongly related to 'personal standards perfectionism', (PSP: a factor composite score consisting of independence, efficacy, and the SOP scale of the HMPS). However, when using the DAS-SC (Weissman & Beck, 1978) as a measure of perfectionism, studies have reported no significant relationship (Dunkley et al., 2004; & Zuroff, 1994) or even a negative relationship (Dunkley et al., 1997), with Conscientiousness. Dunkley et al. (2006) also found that, the factor composite 'SCP', which included the HMPS subscale of SPP, was found to either be negatively related or unrelated to Conscientiousness.

The five-factor domain of Agreeableness has also yielded mixed findings when examined with perfectionism. Hill et al. (1997) found that Agreeableness had a moderate positive association with SOP and a negative association with OOP, as measured by the MPS-H (Hewitt & Flett, 1991). A significant negative relationship has been found between Agreeableness and perfectionism, as measured by the DAS (Weissman & Beck, 1978) in the

studies conducted by Dunkley and colleagues (2004) and Zuroff (1994). Interestingly, Dunkley et al. (1997) observed this negative relationship in men but not women. Finally, Stumpf and Parker (2000) failed to find a relationship between Agreeableness and any of the FMPS (Frost et al., 1990) subscales.

Research has also found either no relationship or a negative relationship between Extraversion and perfectionism in a range of studies. For instance, Dunkley et al. (1997; 2004) found a significant negative relationship between Extraversion and perfectionism as measured by the DAS-SC (Weissman & Beck, 1978). No significant relationship between Extraversion and perfectionism was found when examined by Hill et al. (1997) using the HMPS (Hewitt & Flett, 1991); by Stumpf and Parker (2000) using the FMPS (Frost et al., 1990), or by Zuroff (1994) using the DAS-SC. Finally, research has consistently found that there is no relationship between perfectionism and Openness to Experience (Dunkley et al; 1997; 2004; 2006; Hill et al., 1997; Rice et al., 2007; Stumpf & Parker, 2000; Zuroff, 1994).

The research concerning the relationship between perfectionism and the personality domains of Neuroticism, Openness to Experience and Extraversion has reached clear conclusions. Neuroticism is the most salient personality factor associated with perfectionism. Neuroticism has been consistently found to be positively associated with perfectionism, as assessed by a range of perfectionism measures in both clinical and non-clinical samples. The other consistent findings to emerge from the literature are that there is no relationship evident between perfectionism and Openness to Experience and that there is either no relationship or a negative relationship with Extraversion. However, the studies have yielded mixed findings when examining the relationship between perfectionism and Conscientiousness and Agreeableness. Results of these studies have ranged from finding positive, negative and no relationships between these personality domains and perfectionism.

These mixed findings pertaining to Conscientiousness and Agreeableness may be dependent on the measure of perfectionism used. When examining the literature more closely, a consistent pattern is evident. Neuroticism was most strongly found to be associated with aspects of perfectionism that have been consistently suggested to be representative of the more maladaptive, clinical aspects of perfectionism (Dunkley et al; 1997; 2004; 2006; Hewitt & Flett, 1991; Magnusson et al. 1996; Stumpf & Parker, 2000; Rice et al., 2007; Zuroff, 1994). Several authors (e.g., Dunkley et al., 2006; Enns & Cox, 2002; Stumpf & Parker, 2000) have proposed that measures of perfectionism that are thought to be representative of 'maladaptive perfectionism' have included the CM and DA subscales of the FMPS (Frost et al., 1990); SPP (Hewitt & Flett, 1991a); the DAS-SC (Weissman & Beck, 1978) and the Discrepancy sub-scale of the APS-R (Slaney et al., 1995). Furthermore, a relationship

between Conscientiousness and the constructs that have been repeatedly suggested to represent of the more positive achievement striving aspects of perfectionism has also started to emerge (e.g., Dunkley et al., 2006; Hill et al., 1997; Rice et al., 2007; Stumpf & Parker, 2000). The more positive aspects of perfectionism have been suggested to include the PS and O sub-scales of the FMPS (Frost et al., 1990) and the High Standards and Order subscales of the APS-R (Slaney et al., 1995) and to a lesser extent, the SOP scale of the HMPS (Hewitt & Flett, 1991).

Neuroticism may be associated most strongly with the maladaptive, clinical aspects of perfectionism, whereas Conscientiousness appears to only be related to the more positive achievement striving aspects of perfectionism. This conclusion is supported by a study by Enns and Cox (2002). This research replicated and extended the research on the relationship between the five-factor model of personality and perfectionism by simultaneously examining the five personality constructs with both the FMPS (Frost et al., 1990) and the HMPS (Hewitt & Flett, 1991a). Moderate to large correlations were found between Neuroticism and the FMPS subscales of CM, DA and PC, as well as on the HMPS scale of SPP. In contrast, there were moderate to large correlations between Conscientiousness and PS and O subscales, as measured by the FMPS, as well as a smaller correlation evident with SOP on the HMPS.

Therefore, the research into perfectionism and neuroticism has revealed a consistently positive relationship, which appears to be strongest with the maladaptive aspects of perfectionism. Clearly any models examining aetiological factors to maladaptive or clinical forms of perfectionism should therefore examine neuroticism as one of the key components. This is very important, as while it is commonly agreed that neuroticism precedes the development of perfectionism, no known research to date has examined the assumed direction of this relationship using structural equation modelling. That is, a major limitation of the research into perfectionism and personality domains is that all of the studies have used correlational designs from which directionality cannot be concluded and extraneous factors that may have influenced the relationship cannot be ruled out. Therefore, it is vital that research designs employing structural equation modeling or longitudinal designs be employed in this area. Further research is also required into whether conscientiousness is associated with the more positive, adaptive forms of perfectionism.

#### **1.7.4 Cognitive Factors as Aetiological Factors of Perfectionism**

Numerous studies have demonstrated a strong relationship between perfectionism and cognitive factors (e.g., Flett et al., 1991b; Frost et al., 1997). Most of this research has focused on cognitive factors in terms of their role in maintaining perfectionism, such as in Shafran et al.'s (2002; 2010) models described earlier. The assumption that cognitive factors

are maintaining factors of perfectionism is interesting, given that research in this area has not investigated the directionality of this relationship. Moreover, many of the most prominent cognitive models in psychology have the assumption that beliefs are in fact an underlying factor (and not just a maintaining factor) in the development of psychological disorders (e.g., Barlow, 2002; Beck, 1979). Therefore it is important to distinguish whether perfectionism is only maintained by cognitive factors; or whether cognitive factors contribute to the development of perfectionism; or whether there are different cognitive factors that serve as aetiological and maintaining factors?

There seems to be consensus in the theoretical and empirical research that types of cognitive factors commonly referred to as ‘cognitions per se’, ‘negative automatic thoughts’, ‘dysfunctional assumptions’, and ‘self-critical thinking’ do indeed serve a role as maintaining factors of perfectionism (Shafran et al., 2002). Perfectionists have been found to be more likely than non-perfectionists to interpret daily life events as more stressful or threatening (Frost & DiBartolo, 2002; Frost & Marten, 1990). This is particularly evident in research that has identified an association with SOP and fear of failure (Flett, Blankstein, Hewitt, & Koledin, 1992) and an inability to tolerate failure (Flett, Hewitt, Blankstein, & Mosher, 1991).

People scoring higher on maladaptive aspects of perfectionism have also been found to evaluate tasks with greater anxiety and distress due to the elevated importance and pressure placed on oneself during these tasks (Frost & DiBartolo, 2002). This is evident in research that has examined measures of performance evaluation and perfectionism in professional performing artists (Mor, Day, Flett, & Hewitt, 1995); in students’ prospective evaluations of their exam performance (Brown et al., 1999; Frost et al., 1997); and in self-evaluations on a public speaking task (DiBartolo et al., 2001). Perfectionists have also been suggested to be more likely to selectively attend to failure and discount their successes (Antony & Swinson, 1998; Burns, 1980; Hamachek, 1978; Hollender, 1965).

Therefore, several studies have yielded consistent findings that people who have high levels of perfectionism interpret situations in such a way that it serves to maintain their perfectionism. However, there have been relatively few studies conducted to investigate whether cognitive factors may also be an important aetiological factor in the development of the construct. This is interesting given that the notion of cognitive beliefs/schemas underlying the development of perfectionism has received much theoretical support. In fact, the early theorists viewed perfectionism as a response to low self-worth and inadequacy (e.g., Burns, 1980; Missildine, 1963).

#### **1.7.4.1 Core schemas as an aetiological factor to perfectionism**

Beck's (1979) cognitive model suggests that early life experiences such as parenting and negative life events interact with 'wired in' factors such as temperament. These early experiences lead to the development of a set of schemas or core beliefs that are characterised as global, rigid and mostly negative judgments about self-worth. On the basis of these schemas, rules are developed for living, which include intermediate beliefs, dysfunctional assumptions, negative automatic thoughts and coping strategies. When an individual encounters critical incidents during which the rules for living are or might be broken the schema is then activated. The schema is then maintained through self-critical thinking which leads to maladaptive feelings and behaviour that serve to strengthen and confirm the schema. It can be seen that Beck readily differentiates cognitive factors as schemas or core beliefs versus cognitions per se. The schemas appear to assume an underlying role in the development of psychological difficulties, whereas the cognitions per se are purported to play a maintaining role.

If the findings from the literature review on aetiological factors of perfectionism are viewed along with Beck's (1979) model, it may be theorised that early life events such as high parental expectations and criticism and a lack of parental bonding, combined with personality factors of high Neuroticism, may result in the development of specific cognitive schema that contribute to the development of perfectionism.

Judith Beck (1995), in an extension of the original cognitive model (A. Beck, 1979), has suggested that both core beliefs and intermediate beliefs predict a person's automatic thoughts. Judith Beck wrote that core beliefs may be categorised into the 'Helplessness realm', the 'Unlovability realm', or both. The Helplessness realm includes beliefs that one is defective, incompetent, powerless and a failure. The unlovable realm includes beliefs pertaining to being undesirable, unworthy and unwanted. Judith Beck stated that it is important in case conceptualisation to identify whether a patient's belief is an intermediate belief or a core belief. For example, does the patient believe that they are not good enough to gain respect (Helplessness category) or does the patient believe they are not good enough to gain respect as they are inherently unworthy (Helplessness category as an intermediate belief + Unlovable category as a core belief).

Judith Beck's (1995) cognitive model may have important implications with respect to the relevance of particular core beliefs that may contribute to the development of perfectionism. That is, perfectionism is most often defined as a largely cognitive construct pertaining to the setting and striving for unrealistically high standards and a tendency to be self-critical when these standards are not met. As perfectionism appears to be largely a cognitive construct it



makes conceptual sense that particular core beliefs, such as pertaining to contingent self-worth, may contribute to its development. This is an important area of research as it will have implications for the conceptualisation and treatment of clients who present with perfectionism.

If Aaron Beck's (1979) and Judith Beck's (1995) models are considered in the development of an aetiological model of perfectionism, it may be theorised that early life experiences, such as Affectionless Control and high Parental Expectations and Criticism, combine with 'wired in' factors such as genetics and Neuroticism to result in the development of a set of core schemas relating to Helplessness and Unlovability that mediate the development of perfectionism and the subsequent disorders associated with it. In line with both models, perfectionism would be seen as an intermediate belief or coping strategy that forms as a contingent belief in response to underlying core schemas pertaining to low self-worth, defectiveness, rejection, undesirability and Unlovability.

The theoretical assumption that core schemas may contribute to the development of perfectionism is consistent with case studies in the area. For example, Flett and Hewitt (2002) concluded from a review of the literature on perfectionism that "several case studies suggest that perfectionists may be highly capable people and that in some cases, relentless striving and high performance is an attempt to compensate for perceived deficits in the self" (p. 9). Similarly, several additional case studies have all described the role of perfectionism developing as a way of compensating for core beliefs associated with low self-worth, emotional deprivation, or fear of abandonment by parental figures (Fredtoft, Poulsen, Bauer, & Malm, 1996; Greenburg & Bolger, 2001; Hirsch & Haywood, 1998; Sorotzkin, 1998).

Given the theoretical consensus of the importance of core schemas underlying the development of psychological distress, it is perhaps surprising that there have been relatively few studies that have examined the relationship between core schemas and perfectionism. In DiBartolo et al.'s (2008) review of the literature, they concluded that perfectionists are particularly vulnerable to a sense of contingent self-worth. It has been found that low unconditional self-acceptance mediates the relationship between perfectionism and self-esteem (Flett et al., 2003). A related behavioural concept termed self-concealment has also been identified to also have a relationship with perfectionism. Self-concealment refers to an attempt to try to present a flawless image to others by concealing self-perceived negative information to try and avoid receiving negative evaluations from others (DiBartolo et al., 2008; Frost et al., 1993). Hewitt et al. (2003) found that self-concealment perfectionism was correlated with low self-esteem, and a range of other variables, that led to an increased risk of psychopathology. Kawamura and Frost (2004) also found that self-concealment mediated the

relationship between psychological distress and perfectionism, when measured by the CM and DA subscales from the FMPS (Frost et al., 1990).

DiBartolo et al. (2004) further examined the relationship between the PS subscale on the FMPS (Frost et al., 1990) with a measure of self-worth (CSWS: Contingent Self-Worth Scale) and measures of psychological distress. They found that high personal standards measured by the FMPS related to maladaptive functioning only when meeting these standards was a necessary condition for a sense of self-worth. Their data suggested that the most maladaptive form of conditional self-worth may occur when people feel that have not met their high personal standards and are therefore not worthy. This study is important as it investigated the perfectionism based on contingent self-worth in the context of psychological distress. DiBartolo et al.'s study also provided further support for the aspect of Shafran et al.'s (2002) CBT model of maintaining factors of perfectionism that emphasised the link between meeting one's high personal standards and self-worth. However, as DiBartolo et al.'s design was correlational, the direction of the relationship between psychological distress, perfectionism and self-worth cannot be inferred.

A further limitation of DiBartolo et al.'s (2004) research is that this study only used items from the PS subscale of the FMPS (Frost et al., 1990) as a measure of perfectionism. The literature contains mixed findings as to whether the PS subscale is associated with positive achievement striving forms of perfectionism (e.g., Cox et al., 2002) or more maladaptive forms of perfectionism (e.g., Bieling et al., 2003). This limitation was acknowledged in a follow-up study by DiBartolo et al. (2008). They examined contingent self-worth and self-concealment as potential mediators between perfectionism and various mental health measures. This time, perfectionism was measured by two dimensions: Pure Personal Standards (PPS), which was comprised of five out of the seven items of the PS scale of the FMPS and Maladaptive Evaluative Concerns (MEC), which was comprised of a sum of the CM, DA, PE and PC subscales of the FMPS. DiBartolo and colleagues' (2008) found that contingent self-worth significantly mediated the relationship between mental health and PPS, and fully mediated the relationship between each measure of psychopathology and PPS. It was also found that self-concealment and/or contingent self-worth mediated the relationship between mental health indices and MEC.

DiBartolo and colleagues (2004; 2008) findings demonstrate that core beliefs pertaining to contingent self-worth are an important factor in relation to perfectionism. The latter study is particularly promising given the use of mediational analyses, which permits conclusions regarding the direction of the relationship between variables to be inferred. That is, it can be seen that contingent self-worth and self-concealment mediates the relationship between

perfectionism and psychopathology. This study was principally concerned with whether core beliefs mediated the relationship between perfectionism and psychopathology. The possibility of these core-beliefs as a potential mediating factor for the development of perfectionism was not investigated and would be an interesting area of further research.

A recent study by Park, Heppner and Lee (2010) investigated maladaptive coping and self-esteem as mediating factors between perfectionism and psychological distress. Results of structural equation modeling revealed that for Korean college students, self-esteem was a mediator between maladaptive coping and distress. However, self-esteem was not found to be a mediator between maladaptive perfectionism and distress. Maladaptive perfectionism was measured by CM and DA. This is an interesting finding, which is contrary to DiBartolo et al.'s (2004; 2008) results and indicates that further research is required into the role that self-esteem beliefs play as a mediating factor in the construct of perfectionism. However, as self-esteem and contingent self-worth are not necessarily the same thing, this may account for the discrepancy in the findings between the two studies. Therefore, it would be informative to repeat DiBartolo et al.'s (2004; 2008) and Park et al.'s studies using both measures of self-esteem and contingent self-worth to compare findings.

The studies conducted by DiBartolo et al. (2004; 2008) and Park et al. (2010) have some limitations. These studies were conducted on university students, therefore the findings cannot be generalised to a clinical population. Furthermore, these studies examined only limited beliefs pertaining to self-esteem, self-worth and self-concealment, which are only a few of the many core beliefs that have been theorised to underlie psychological disorders (e.g., see Beck, 1979; Young, 1999).

There are few studies that have attempted to examine a broader range of core beliefs/schemas and their relationship with perfectionism. Flett, Hewitt, Blankstein and Koledin (1991) examined the relationship between irrational beliefs and perfectionism, as measured by the HMPS (Hewitt & Flett, 1991a). Flett et al. reasoned that perfectionism and the associated emotional states of perfectionism was likely to be mediated by irrational beliefs, such as those proposed by Ellis (1962). Flett et al. administered the HMPS and the Irrational Beliefs Test (IBT; Jones, 1969) to 102 undergraduate University students. Self-oriented perfectionism was significantly correlated with four beliefs measured by the IBT, including demand for approval, high self-expectations, frustration reactivity and perfect solutions.

Flett et al. (1991) did note that the IBT (Jones, 1969) had been previously criticised as the subscales of this measure contain content that appears to relate to cognitions (i.e. personal beliefs) and also to affect-laden statements. On this basis, they performed a second study that

examined perfectionism and irrational beliefs, using the Survey of Personal Beliefs (SPB; Demaria, Kassino, & Dill, 1986), which is a measure focusing on cognitions per se and not levels of negative affect. The results showed that SOP was significantly correlated with the irrational beliefs referred to as 'self-directed shoulds', 'other-directed shoulds' and 'total rationality'. Flett et al. (1991) concluded that taken together their studies' findings "provide additional support for the view that the interpersonal aspects of perfectionism may lead to emotional distress and are perhaps mediated by irrational beliefs" (p.196-197).

Similarly in a later study, Flett, Hewitt and Cheng (2008) examined the relationships between dimensions of perfectionism and irrational beliefs in an adolescent sample. Perfectionism was measured by the HMPS (Hewitt & Flett, 1991a) and irrational beliefs were again measured by the SPB (Demaria et al., 1986). It was found that SOP and SPP were associated with all five irrational belief subscales from the SPB, including self-directed shoulds, other-oriented shoulds, awfulising beliefs, low frustration tolerance and self-worth. However, smaller magnitudes of associations were found between SPP and the irrational beliefs, when compared to SOP.

The studies by Flett and colleagues (1991; 2008) represent an extension of the majority of the research on cognitive variables of perfectionism as they sought to explore the mediating influence that beliefs may have on perfectionism. However, as acknowledged by the authors, the studies have some statistical and methodological limitations that precluded an examination of beliefs as a mediating variable. Firstly, using correlational analyses allowed the authors to infer that perfectionism and the beliefs measured were significantly associated, however directionality in relationship between these variables can be ascertained. Therefore, the relationship of beliefs as a mediating variable to perfectionism cannot be inferred. Secondly, both studies used samples of college students, which limits the generalisability of the findings to clinical populations.

A third methodological limitation of Flett et al.'s (1991; 2008) studies is the way the beliefs have been measured. Flett et al. (1991; 2008) sought to explore irrational beliefs, such as those proposed by Ellis (1962). Ellis postulated that irrational beliefs underlie and maintain emotional disturbance. Ellis's (1962; 1999) core beliefs included eleven 'irrational ideas', ranging from ideas such as "one absolutely must be competent, adequate and achieving in all important respects or else one is an inadequate, worthless person", to ideas such as "one cannot and must not face life's responsibilities and difficulties and it is easier to avoid them". In a comparative review of Ellis's (1962; 1999) and Beck's (1979; 1996) theories conducted by Hersen, Thomas, Segal, Andrasik and Ammerman (1995), it was noted that the two theories have several similar facets to their therapies. However, they noted that Beck's (1979)

theory extends beyond the simple association of certain thoughts with certain feelings and instead is a comprehensive system composed of automatic thoughts, intermediate beliefs and schemata.

Hersen et al. (1995) suggested that when comparing Beck's (1979; 1996) and Ellis's (1962; 1999) theories, it is noted that Ellis's beliefs were more concerned with irrational ideas than the core schema identified in Beck's theory, and that using questionnaires such as the IBT (Jones, 1969) and SPB (Demaria et al., 1986), may have only measured cognitive thoughts per se and not beliefs. That is, the IBT measured beliefs such as 'low frustration tolerance' and 'the need for perfect solutions to perfect problems'. Similarly, the SPB measured items, such as self-directed shoulds (e.g., "When I make a mistake, I usually tell myself, I shouldn't have done that"). It appears that the content of both the IBT and SPB measures cognitions per se, which is consistent with Ellis's (1962; 1999) theory and was exactly the aim of Flett et al.'s (1991) study. However, if beliefs as a mediating variable were being investigated the research ideally would have instead explored central core schemas as postulated in Beck's (1979; 1996) theory using different measures that capture core schemas rather than cognitions. In this respect, Hersen et al. (1995) noted that in recent years, Young (1990; 1999) has expanded the theories relating to underlying schemata that capture core beliefs and not just cognitions.

Consistent with Aaron Beck (1979) and Judith Beck's (1995) models, Young (1999) theorised that early life experiences, personality and temperament can lead to the emergence of early maladaptive schemas. Young proposed the notion of 18 early maladaptive schemas that were grouped into five schema domains (see Table 3). More detailed definitions and descriptions of each early maladaptive schema and schema domains can be found in Young (1999). Young developed the Young Schema Questionnaire (YSQ; 1994) to provide a measure of each of these core cognitive schemas. The YSQ is available in a 206-item long form version or a shortened version (YSQ-SF). The YSQ and YSQ-Short Form (Young, 1998) have been found to have good psychometric properties (e.g., Stopa, Thorne, Wates, & Preston, 2001; Oei & Baranoff, 2007).

Table 3

*Schema Domains and Early Maladaptive Schemas*

<i>Schema Domain</i>	<i>Early Maladaptive Schemas</i>
Disconnection & Rejection	Abandonment / Instability
	Mistrust / Abuse
	Emotional Deprivation
	Defectiveness / Shame
	Social Isolation / Alienation
Impaired Autonomy & Performance	Dependence / Incompetence
	Vulnerability to Harm / Illness
	Enmeshment / Undeveloped self
	Failure
Impaired Limits	Entitlement /Grandiosity
	Insufficient Self-control / Self-discipline
Other-Directedness	Subjugation
	Self-sacrifice
	Approval/ Recognition-seeking
Over-vigilance & Inhibition	Negativity / Pessimism
	Emotional Inhibition
	Unrelenting Standards
	Punitiveness

Young (1999; 2004) theorised that some schemas develop as a compensatory belief for other underlying schemas. The schema domains of Impaired Limits, Other-Directedness and Over-vigilance and Inhibition are believed to commonly develop as compensatory beliefs for the underlying schema domains of Disconnection and Rejection and Impaired Autonomy and Performance. If Young's theory (1999) is interpreted within the context of Aaron Beck (1979) and Judith Beck's (1995) model, then the belief of Unrelenting Standards (which is consistent with some of the key components of many definitions of perfectionism and defined

as the belief that whatever one does, it is never perceived as being good enough and therefore, the person must always strive harder), is hypothesised to develop as an intermediate belief in response to other underlying schemas that comprise the Disconnection and Rejection domain.

The schema domain of Disconnection and Rejection is defined by Young (1999) as the expectation that a person's needs for safety, stability, acceptance, respect, security, sharing of feelings and empathy will not be provided in a predictable manner. The family of origin that is thought to lead to the Disconnection and Rejection Core Schemas is described as being detached, rejecting, cold, unpredictable, withholding, lonely or abusive. Young defined Emotional Deprivation as the belief that occurs when one's primary emotional needs were not met by others. Defectiveness refers to the belief that one is inherently flawed and if other people get to know the person well they will realise this and withdraw from the relationship. Social Isolation is defined as the belief that one is different from others and isolated from the world. The Abandonment/Instability schema is defined as the perceived unreliability or instability of those people who are available for connection and support. Finally, the Mistrust/Abuse schema is described as the expectation that others will lie, manipulate, cheat, hurt, abuse, humiliate, or take advantage.

Young's (1999) schema domain of Disconnection and Rejection appears to contain the core beliefs that are closest to Judith Beck's (1995) classification of beliefs that pertain to Unlovability and Helplessness. It can be seen that Young's (1999) schema domain of Disconnection and Rejection contains beliefs of Emotional Deprivation, Abandonment/Instability, Mistrust/Abuse, Defectiveness/Shame and Social Isolation/Alienation. These beliefs are similar in content to Beck's core beliefs of unlovability, rejection, being unworthy and being undesirable respectively. It also makes intuitive sense that beliefs that comprise the Disconnection and Rejection Core Schemas would lead to the development of beliefs pertaining to perfectionism as a way of trying to attain these unmet emotional needs. It may also be the case that the Disconnection and Rejection Core Schemas may be associated with intermediate beliefs of Subjugation, Self-sacrificing and Approval-seeking (Other-Directedness schema domain), as these schemas involve having an excessive focus on meeting the needs of others at the expense of one's own needs in order to gain love and approval (Young, 1999). The investigation of the relationship between these schema domains may be an interesting area of future study.

The parental criticism and lack of parental bonding that Young (1999) proposes as precipitating factors to the development of Disconnection and Rejection Core Schemas is also consistent with the literature reviewed on parenting (e.g., Enns et al., 2000). However,

similar to the models presented by Shafran et al. (2002) and Slade and Owens (1987), all aspects of Young's (1999) theory have not been simultaneously tested in an empirical study. Furthermore, Young's (1999) subscale of Unrelenting Standards is not frequently used in the literature as a measure of perfectionism. This is likely due to the lack of research that has examined the relationship between the Unrelenting Standards subscale and other well validated measures of perfectionism, such as the FMPS (Frost et al., 1990). Furthermore, Unrelenting Standards only refers to the setting and striving for high standards and does not measure other multifaceted components of perfectionism, which is not in line with the current consensus of perfectionism as a multidimensional construct. Therefore, whilst Young's theory would appear to be of relevance when studying aetiological factors in perfectionism, research would first need to examine the relationship between Young's proposed core beliefs and well-established measures of perfectionism.

One such study has been conducted by Waller, Dickson and Ohanian (2002), who examined the relationship between eating psychopathology, as measured by the EDI-2 (Garner, 1991), and core beliefs, as measured by the YSQ (Young, 1994) in 75 clients diagnosed with bulimic disorders. The Unrelenting Standards belief from the YSQ was most strongly related to the EDI-2 perfectionism scale ( $r = .63$ ), providing support for the convergent validity of these measures. The YSQ beliefs that were found to have the most consistent links to the ego-dysfunction scales of the EDI-2, were the subscales of Abandonment, Emotional Inhibition, Mistrust/Abuse, and Social Isolation. The perfectionism scale is classified as one of the eight ego-dysfunction scales of the EDI-2. The YSQ beliefs that were found to be significantly correlated with the EDI-2 perfectionism scale were the subscales of Abandonment, Mistrust/Abuse, Social Isolation, Unrelenting Standards and Vulnerability to Harm. Waller et al. concluded from these findings that certain core beliefs lead to the development of ego-dysfunction, which in turn results in eating disturbance. This study provided important contributions to the literature as the findings offered support for the relationship between YSQ beliefs and the EDI-2, which is a well-established questionnaire that includes a measure of perfectionism. Furthermore, Waller and colleagues suggested that treatment of bulimia may require addressing underlying core beliefs (such as those pertaining to emotional deprivation) as well as the thoughts and attitudes that appear to have a more direct link to eating disorders (such as perfectionism). This multidimensional view is consistent with theories such as that proposed by Young (1999). However, Waller et al. acknowledged that as they employed a correlational design, it is necessary to be cautious about inferring causal relationship and that future research needs to use prospective designs to examine the relationship further.

Whilst there has been a lack of direct research into core schemas in the area of perfectionism,



in recent years the mediating role of schemas has been theorised and investigated in relation to eating disorders and depression, which have been linked to the construct of perfectionism. Based on an extensive review of the literature, Cooper et al. (2004) proposed a cognitive model of the development and maintenance of bulimia nervosa. This model drew on the models proposed by Beck and Freeman (1990) and Young (1999), and suggested that traumatic or early life experiences, including negative family of origin experiences resulted in the development of unhealthy core beliefs. These core beliefs are then maintained by schema avoidance and compensatory behaviour that contributed to behaviours related to anorexia and bulimia nervosa. Cooper and colleagues cited empirical research findings to indirectly support each aspect of their model and proposed that this model be directly tested in a clinical population. This model provided a valuable extension to the literature as it proposed relationships between many factors that had previously been studied in isolation in the eating disorder literature and included both aetiological and maintaining factors in the same cognitive model.

In support of Cooper et al.'s (2004) model, the core schema of Mistrust/Abuse measured by the YSQ (Young, 1998) was found to act as a partial mediator between paternal Protection, as measured by the PBI (Parker et al., 1979) and the severity of bulimic cognitions (Meyer & Gillings, 2004). Beliefs pertaining to internalised shame have also been found to mediate the relationship between parental protection and bulimic cognitions in a non-clinical sample (Murray, Waller, & Legg, 2000). In addition, Turner, Rose and Cooper (2004) also found that the YSQ schemas of Defectiveness/Shame and Dependence/Incompetence mediated the relationship between parental bonding (low care and high protection on the PBI) and eating disorder symptoms. Furthermore, Jones, Harris and Leung (2005) found that YSQ schemas of Social Isolation, Vulnerability to Harm and Self-Sacrifice moderated the predictive relationship between paternal rejection and eating psychopathology. Schemas of Vulnerability to Harm and Social Isolation moderated the relationship between paternal rejection and drive for thinness and the Self-Sacrificing schema moderated the relationship between paternal rejection and body satisfaction. Finally, it was found in a sample of depressed patients that five YSQ schemas of Dependence/Incompetence, Emotional Inhibition, Failure to Achieve, Vulnerability to Harm and Unrelenting Standards acted as mediators in the relationship between paternal protection and maternal bonding, and depressive psychopathology (Shah & Waller, 2000).

The studies that have investigated the mediating role of core schemas in the relationship between parental bonding and eating disorder and depressive psychopathology are in line with prominent cognitive theories (Beck, 1979; Beck, 1995; Young, 1999). While this research has extended the literature and highlighted the important mediating role of cognitive

schemas, the findings have been inconsistent in regards to identifying which of the schemas contribute to the development of psychopathology. Therefore, further research needs to investigate the mediating roles of schemas and include this as a potential factor in aetiological models. More specifically, the mediating role of core schemas needs to be directly investigated in the area of perfectionism.

#### **1.7.4.2 Summary of core beliefs and perfectionism**

Overall, whilst there is consensus that cognitions play an important role in maintaining perfectionism, there has been limited research into the relationship between core schemas as a potential aetiological factor that contributes to the development of the construct. Many of the major cognitive theories are based on the assumption that core schemas underlie and therefore contribute to the development of specific psychological disorders (e.g., Beck, 1979; Beck, 2005; Young; 1999). Therefore, it is logical to assume that core schemas may also play an important role in the development of perfectionism. Few studies have investigated the link between perfectionism and core schemas. Di Bartolo and colleagues (2004; 2008) have identified that core schemas such as contingent self-worth and the related behaviour of self-concealment mediate the relationship between perfectionism and subsequent psychopathology. In contrast, Park et al. (2010) found that self-esteem did not mediate the relationship between maladaptive perfectionism and distress.

The possibility of core schemas as a mediator between perfectionism and other well identified aetiological factors has not been examined. Flett and colleagues (1991; 2008) have found that irrational beliefs are associated with perfectionism. However, irrational beliefs in these studies were measured by the IBT (Jones, 1969) and SPB (Demaria et al., 1986), which have been criticised for providing a measure of cognitions per se and not cognitive schema. Similarly, Flett and colleagues studies did not use methodological designs that allowed directionality between cognitions and perfectionism to be inferred. Furthermore, DiBartolo et al.'s (2004; 2008), Park et al.'s (2010) and Flett and colleagues' (1991; 2008) studies were conducted on university students and therefore their results have limited generalisability to clinical populations. Waller et al. (2002) used a clinical sample and used the YSQ (Young, 1994) to examine cognitive beliefs and perfectionism, which provided an examination of a wider range of beliefs, however, in that study the use of a correlational design prevented conclusions regarding core beliefs as a mediating factor of perfectionism. Several other studies using mediational designs have found that core schemas play a mediating role between parental bonding and psychopathology, however perfectionism was not directly tested in those studies (e.g., Jones et al., 2005; Turner et al., 2004). Therefore, it can be seen that, in the few studies that have investigated the relationship between core schemas and perfectionism, a strong positive association has consistently been identified. However, the

methodology used in these studies has not allowed for examination of the role of core schemas as a mediating aetiological factor in the development of the construct.

It is clear that future research needs to explore the role of core beliefs as a mediating/causal factor in the development of perfectionism in a clinical population. It is important to examine the role of core schemas as a mediating aetiological factor in perfectionism, so that any subsequent aetiological model and psychological treatments could incorporate this dimension. This suggestion is supported by Glover et al. (2007), who stated that a schema-focused phase needed to be incorporated into a model to address the developmental origins and traumatic experiences that result in the development of the schema.

Overall, based on prominent cognitive theories (A. Beck, 1979; J. Beck, 1995; Young, 1999), it is plausible to hypothesise that core schemas may play an aetiological role in the development of perfectionism; more specifically, core schemas may play a mediating role between parenting and personality factors and perfectionism. It is important, therefore, to examine cognitive schemas as a mediating aetiological factor in the development of perfectionism. This would provide an opportunity to see whether empirical data are consistent with the theories of Aaron Beck (1979), Judith Beck (1995) and Young (1999) as they pertain to the aetiology of perfectionism. Previous research and theory has provided empirical support for these models by identifying a mediating role for several of the schemas on the YSQ-SF (Young, 1998) in the relationship between parental bonding and eating disordered and depressive psychopathology (Cooper et al., 2004; Jones et al., 2005; Meyer & Gillings, 2004; Shah & Waller, 2000; Turner et al., 2004). Given the established link between perfectionism and psychopathology, it makes intuitive sense that core schemas that relate to constructs of emotional disconnection and rejection may play a similar mediating role between parental factors and perfectionism.

### **1.7.5 Summary of Logistical Constraints of Measuring Aetiological Factors**

As mentioned throughout the literature review, with the exception of a few studies, most research that has examined aetiological factors of perfectionism has done so by employing correlational designs. The main limitation of these designs is that correlation does not mean causation and hence this methodology does not provide a test of cause and effect (e.g., Tabachnick & Fidell, 1989). When a design is correlational the only conclusion that can be drawn is that the variables are related to each other in some way but direction of the relationship between the variables is not able to be known. Furthermore, finding a significant correlation between variables does not discount the possibility of extraneous variables that were not addressed and measured to have caused or contributed the relationship.

To reach a conclusion that one variable causes another, three criteria need to be satisfied: the criteria for covariation, directionality and causal closure (Long, 1983). The criterion of covariation requires that the variables are associated, for example parental Affectionless Control would need to be shown to covary with perfectionism. The next criterion of directionality requires that one variable can be shown to precede another, for example, Affectionless Control would need to precede perfectionism. Finally, the criterion of causal closure requires the relationship between the variables to be closed to outside influences. For example, the relationship between Affectionless Control and perfectionism would need to be closed to other extraneous variables, such as traumatic events. The experimental design is the only design that satisfies all three criteria. However, to conduct an experimental design on aetiological factors of perfectionism, it would be necessary to randomly allocate participants to groups in which varying levels of parental Affectionless Control was manipulated and studied over a longitudinal time frame. Given that ethical and practical considerations naturally prevent the use of such a design, it is necessary to use a statistical technique that is capable of shedding some light on the cause and effect relationships that might have generated the correlational data. Three such techniques are: cross-lagged panel correlational analysis, path analysis and structural equation modeling (SEM; also known as covariance structure analysis). Of these techniques, SEM is mathematically the most sophisticated (Hardy & Bryman, 2004). Structural Equation Modeling – like path analysis, it is used to test the viability of causal models. Unlike path models, which only incorporate observed variables measured with error, structural equation models include both observed and latent variables. Latent variables are the psychological constructs being measured by the observed variables. By including both observed and latent variables in the modeling process, SEM is able to account for measurement error in the observed variables (Kline, 1998).

Because many of the short-comings of correlational research can be addressed statistically using structural equation modeling, it is important to use this technique when examining a proposed aetiological model. Hardy and Bryman (2004) state that there are several advantages of using SEM as opposed to more traditional techniques such as multivariate analyses of variance or regression. They state that removing the measurement error allows only common variance to remain between the factors examined, which means that the reliability of the measurement can be accounted for explicitly. Hardy and Bryman (2004) further state that SEM is the only analysis that provides complete and simultaneous tests of all of the relationships among variables, and therefore is the most appropriate statistic when the phenomena of interest is multidimensional and complex.

Given the complexity of using SEM and the requirements for a large number of clinical participants to measure each possible relationship (e.g., Kline, 1998), it is not surprising that

despite a strong theoretical background, research into developing and testing aetiological models of perfectionism has been relatively slow in developing as an area of investigation. Given the distinct statistical advantages that SEM is able to offer over less sophisticated correlational analyses, where feasible, SEM is the preferred statistic (Hardy & Bryman, 2004).

#### **1.7.6 Flett et al.'s (2002) Aetiological Model of Perfectionism**

After reviewing the literature on aetiological factors associated with perfectionism, it is clear that parental bonding and the personality factor of Neuroticism are the most salient factors identified. Based on a review of the theoretical and empirical literature, it is also likely that core beliefs may play an important mediating factor in the development of perfectionism, however, this area needs to be examined further. Perhaps what is most apparent from the review is that the directionality of the relationship between the aetiological factors and perfectionism needs to be established. Furthermore, the inter-relationships between these aetiological factors need to be examined. This would contribute to the development of an aetiological model of perfectionism, which would benefit our understanding and treatment of the construct.

Flett et al. (2002) acknowledged the need for a model of perfectionism that is mindful of the numerous heterogeneous factors that contribute to the aetiology of the construct. In fact, in Flett and colleagues' comprehensive review of perfectionism in children and their parents, they suggested a preliminary model of the development of perfectionism. This model was based on the three types of perfectionism; SOP, OOP and SPP, as shown in

Figure 2. Flett et al. suggested that a combination of risk factors can lead to the development of perfectionism. These factors are parenting, child and environmental factors. First, Flett and colleagues suggested that authoritarian parents who have their own high standards and perfectionist goals and who are also highly demanding of achievement oriented performance in their children is a risk factor for the development of perfectionism. Second, the child risk factors include having a temperament that includes high levels of emotionality and persistence as well as being more open to socialisation and influence from others. Third, they propose that environmental factors such as society's focus on academic achievements create a socially competitive environment that fosters perfectionism. Flett et al. assert that once these three risk factors are present, the individual may then go on to develop SOP or OOP. Alternatively the child may rebel against the pressure from their parents and society and not develop perfectionism.

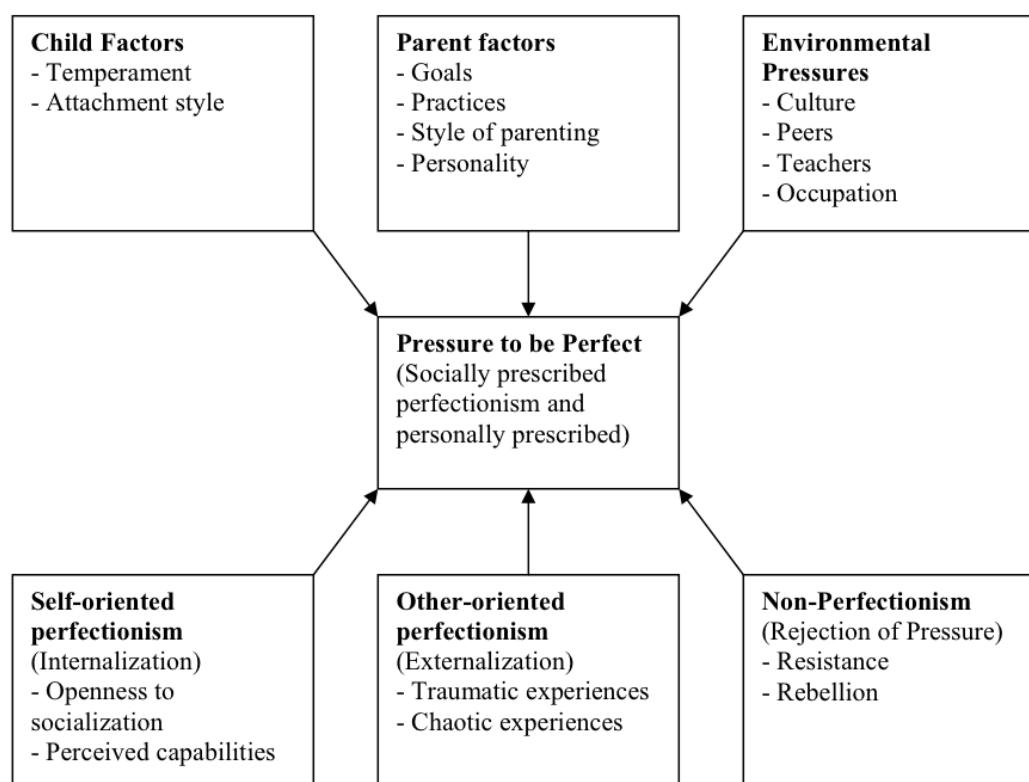


Figure 2. Preliminary model of the development of perfectionism, reproduced from Flett et al. (2002), p.94.

Flett and colleagues' (2002) model is one of the first to promote the incorporation of heterogeneous factors to perfectionism and therefore represents an excellent extension of previous literature in this area. However, this model has yet to be tested in clinical and non-clinical samples. Moreover, with the exception of the risk factor of high parental expectations, the aetiological factors incorporated in the model have not been identified in the literature as the most salient aetiological factors to be associated with perfectionism. That is, parental bonding, or more specifically, Affectionless Control, is not included in the model. Affectionless Control has been identified as the most salient aetiological factor of perfectionism in the parenting literature (e.g., Enns et al., 2000; Stoeber, 1998). Similarly, a high level of emotionality is identified as a childhood risk factor in Flett et al.'s model, but there is no specific mention of the personality dimension of neuroticism, which has been identified as having the strongest relationship with perfectionism (e.g., Rice et al., 2007; Stumpf & Parker, 2000; Zuroff, 1994). Furthermore, cognitive factors have been omitted from the model, despite their acknowledged role in theoretical models (e.g., Barlow, 2002; Beck, 1979) and the positive association between core beliefs and perfectionism (e.g., DiBartolo et al., 2008; Flett et al., 1991; Waller et al., 2002). In addition the well-identified aetiological factor of biological vulnerability is omitted. Therefore, this model is not based on

the most salient aetiological factors of perfectionism identified in the current literature. Furthermore, Flett et al.'s model is not completely consistent with the main theories of anxiety and emotional disorders, that consider the inter-relationships that develop between temperament, parenting and cognitions, which is important given the established link between perfectionism and psychological disorders (e.g., Bardone-Cone et al., 2007; Egan et al., in press; Shafran & Mansell, 2001). Finally, the model is not a structural model and as such does not consider interactions among the aetiological factors; consequently mediating relationships are not accounted for between any of the variables. This is a serious omission as assuming that there are only direct and unique relationships between aetiological factors and perfectionism does not allow for information on the more complex inter-relationships between factors, which have important implications for understanding the construct of perfectionism and developing subsequent treatments for complex psychological disorders. Therefore, as this model is not in line with the most salient aetiological factors identified in the literature, research would be required in clinical and non-clinical samples to evaluate the usefulness of this aetiological model of perfectionism.

To date, to the author's knowledge there are no models that have included all major aetiological factors identified in the literature as being relevant to the development of perfectionism. Instead most research into the aetiology of the construct has studied aetiological factors as single entities. In addition, no multidimensional aetiological models of perfectionism have been empirically tested. This has precluded an examination of the aetiological pathways that may be unique or may overlap in the development of perfectionism. Therefore, future research needs to incorporate the salient aetiological factors of the construct into an aetiological model.

## **1.8 Summary of Literature, Aims and Rationale**

Perfectionism has been recognised as a clinical construct for over a century, and has become an increasingly prominent area of research over the past two decades. There is a strong consensus in the literature that perfectionism is viewed and measured as a multidimensional construct. Despite disagreement over the definition of perfectionism, most theorists acknowledge that perfectionism has several similar facets, including setting and striving to meet unrealistic standards, fear of making mistakes, and a resulting decrease in perceived self-worth when these standards are not attained. Perfectionism has been found to play a pivotal role in the development and maintenance of a wide range of psychological disorders, including depression, eating disorders and anxiety disorders, including OCD and social phobia. Promising models and treatments for perfectionism based on targeting maintaining factors have been proposed, which have received mixed support and are areas that require

further research.

Despite the increase in research in the area of perfectionism, it appears that research into the aetiological factors that contribute to the development of perfectionism remain under investigated. A literature review on the aetiological factors of perfectionism, identified a strong association with three salient dimensions: genetic factors, parental bonding and neuroticism. The role of core schemas has also been theorised to be an important aetiological factor in the development of perfectionism, however, there has also been a paucity of research in this area. When these aetiological factors have been identified, they have generally been examined in isolation. This has prevented an examination of how the salient aetiological factors inter-relate. Furthermore, the predominant use of correlational designs in this area has prohibited inferences regarding directionality between these aetiological factors and perfectionism to be concluded with certainty. Indeed, only one aetiological model of perfectionism has been proposed, however this has not been directly tested, did not propose inter-relationships between aetiological factors and has excluded some of the salient aetiological factors identified in the literature. Therefore, there are still many areas of research required in the area of perfectionism, particularly in examining the aetiological factors that contribute to the development of perfectionism.

Developing an aetiological model of perfectionism is important for several reasons. First, an aetiological model of perfectionism will help to further understand the overall construct of perfectionism, and link together many areas of research in the area of perfectionism. Second, in the absence of an aetiological model of perfectionism, treatments for the problem have developed on the basis of an understanding of the construct provided through measurements of perfectionism. This is at odds with most other psychological constructs, which rely heavily on the development and validation of aetiological models to subsequently develop measurement tools, and to develop treatments. Third, it is through establishing and validating models of psychological constructs that advances in psychological treatment can be made. The development and validation of aetiological models is important as it highlights the most salient developmental factors of a psychological construct, that can then be used to facilitate more comprehensive individualised case conceptualisation and intervention targeted specifically at the aetiological and maintaining factors relevant to perfectionism. This knowledge can enhance the models and treatments aimed at targeting maintaining factors of perfectionism, and allow treatments to be developed that target both aetiological and maintaining factors of perfectionism where appropriate. Fourth, by furthering understanding of effective treatments for perfectionism, evidence-based treatments for a range of related psychological disorders (e.g., OCD, eating disorders) could also become more effective and reduce the distress among individuals suffering from these disorders. Knowledge of whether



the aetiological factors of perfectionism are important in the treatment of clients with complex longstanding psychological histories and provides an extension to treatments that target the maintaining factors of perfectionism is an important empirical question to be investigated.

To further understand the construct of perfectionism, an aetiological model of perfectionism is proposed and tested in a clinical population using one central study and a smaller clinical descriptive study. A comprehensive literature review identified the salient aetiological factors of perfectionism based on well-accepted theories and empirically validated studies. An aetiological model was developed that included parental bonding, Parental Expectations and Criticism, Neuroticism, and cognitive schema. This model was then tested in a large clinical population of clients currently receiving treatments for a wide range of psychological disorders, predominantly derived from the private practices of clinical psychologists and psychiatrists. The rationale for examining this model in this population was to test the validity of the aetiological model in a clinical population with a variety of psychological disorders in settings that clinical psychologists and psychiatrists are likely to encounter frequently, in order to enhance the generalisability of the findings of the research to a real world clinical setting. It has been well established that perfectionism is linked to a variety of psychological disorders, therefore a clinical population with varied presenting difficulties was recruited. Qualitative interviews were also conducted with a small number of clients to explore their perceptions of the factors that contributed to the development of their perfectionism. The two studies are linked together with the overall aim of trying to develop and validate an aetiological model of perfectionism in a clinical population that is consistent with clients' perceptions. The rationale and aims for each study are presented in this section, however, specific hypotheses for each study are presented in the relevant chapters to follow.

### **1.8.1 Rationale for Study One: Developing and Testing an Aetiological Model of Perfectionism.**

A review of the literature indicated that the most salient aetiological variables to perfectionism associated with psychological distress included genetic, parenting, personality and cognitive factors. In the parenting literature, parental bonding was the most salient factor identified. Parents who expressed high expectations and who were critical of their children were observed as strongly associated with high levels of perfectionism. In the personality literature, neuroticism was a consistent salient variable that was identified to be strongly associated with perfectionism. However, causal statistics are required to inform the directionality of the relationship between parenting and personality factors, and perfectionism. Furthermore, cognitive schemas were identified as a factor that may play a mediating role between perfectionism and psychopathology. Despite the theoretical

consensus that core beliefs often develop from environmental factors and lead to subsequent psychological disorders, cognitive schemas have not been directly examined as a mediating aetiological factor for perfectionism using a causal design from which conclusions can be accurately drawn.

Moreover, although parenting and personality factors have been studied separately in their relationship to perfectionism, the inter-relationships between these variables that may lead to the development of cognitive schema that underlie perfectionism have not yet been studied. Research into the inter-relationships between these factors would allow a theoretical model into the aetiological factors of perfectionism to be developed and empirically evaluated. Based on the previous literature, it appears that in addition to the known influence of genetic factors, parenting factors (lack of parental bonding and high Parental Expectations and Criticisms) combined with personality factors (high Neuroticism) may also contribute to the development of particular cognitive schema (such as Disconnection and Rejection Core Schemas) that in turn contributes to the development of perfectionism.

The aims of the proposed study are as follows:

#### **Aim 1 – To develop an aetiological model of perfectionism**

The salient aetiological factors of perfectionism were identified on the basis of theoretical and empirical research. A model was proposed based on the theorised inter-relationships between these aetiological variables.

#### **Aim 2 – To identify an appropriate measure of each aetiological factor**

Based on the construct of each aetiological factor to be included in the model, an appropriate measure was selected and the psychometric properties were assessed. Factor analyses were conducted to confirm the factor structure of each measure.

#### **Aim 3 – Test the aetiological model of perfectionism**

The measures were administered to a large clinical population of clients experiencing a wide range of psychological disorders in predominantly private practice settings. The results of these measures were examined using structural equation modeling, to determine whether the model received empirical support.

### **1.8.2 Rationale for Study Two: A Clinical Investigation of Clients' Perceptions of Aetiological Factors of Perfectionism.**

The predominant methodology used in examining the aetiological factors of perfectionism has been quantitative. However, several authors have noted that rich clinical detail has been

provided from case studies of clients with issues relating to perfectionism (e.g., Fredtoft et al., 1996; Shafran et al., 2004; Sorotzkin, 1998). Therefore a mixed methodology approach was used in the present research design that combined both quantitative and qualitative methodologies to attempt to produce convergent findings (Lingard, Albert, & Levinson, 2008). The primary study in this research was supplemented by a clinical descriptive study in order to provide a rich understanding of clients' perceptions in regard to the aetiology of perfectionism through the use of explanatory case studies (Yin, 1997). A semi-structured clinical interview was used to explore client's perceptions of the aetiological factors that they believed contributed to the development of their own perfectionism. The qualitative responses obtained from the clients were then presented as case formulations to explore whether the client's in-depth perceptions of the aetiological factors that lead to the development of their perfectionism were consistent with the aetiological factors identified in the literature, and that proposed in the current aetiological model. The qualitative responses also allowed an examination of whether the client's perceptions of the inter-relationships between the aetiological factors they perceived to contribute to the development of their perfectionism was in line with the causal relationships proposed and identified in the aetiological model. To date, no studies have examined clients' perceptions of the aetiological factors of perfectionism.

**Aim: Investigate clients' perceptions of the aetiological factors to their perfectionism.**

Three clients were interviewed using a semi-structured format to ascertain rich clinical detail regarding the client's perceptions of aetiological factors identified in the literature, and to provide opportunity for further identification of aetiological factors. Following the interviews, these clients also completed the same quantitative measures of aetiological factors of perfectionism, used in evaluating the model to ensure that their scores were consistent with those clients in the larger clinical population used in the validation of the aetiological model.

## **CHAPTER 2: STUDY ONE – DEVELOPING AND TESTING AN AETIOLOGICAL MODEL OF PERFECTIONISM**

### **2.1 Introduction**

In the last twenty years, important advances have been made in the research pertaining to perfectionism. The definition and measurement of perfectionism as a multidimensional construct has developed. A body of empirical evidence has formed linking perfectionism to anxiety, negative affective states and eating disorders in clinical and non-clinical samples (e.g., Shafran & Mansell, 2001; Egan et al., in press). Perhaps surprisingly, the research into the aetiology of the construct has been less well developed.

In the previous literature review it was argued that an aetiological model of perfectionism would be an important addition to the literature. When proposing such a model, it would naturally be optimal to investigate all factors that previous research has identified as potentially having an aetiological relationship with perfectionism. Realistically, however, the current model had to be restricted to those factors that have been identified as having a consistent, strong association with perfectionism so that it could be optimally evaluated in a clinical sample. Unfortunately, testing a model in a clinical population restricts the sample size; this is problematic given the relatively large number of participants required to provide sufficient power in a statistical analysis to allow causality to be inferred (Kline, 1998). Thus, given these power requirements only the salient factors of perfectionism were included in the model.

The following provides a summary of the salient aetiological factors of perfectionism for inclusion in the model outlined in the previous literature review, and identifies the measures that are consistent with each aetiological factor.

The first factor to be included in an aetiological model of perfectionism would naturally be the construct of perfectionism itself. Whilst the definition of perfectionism is still to be agreed upon in the literature, most theorists acknowledge that the construct has numerous similar components, including setting unrealistic standards, excessive striving to meet these unattainable standards, a fear of making mistakes, and a lowering of perceived self-worth when these standards are not achieved (e.g., Burns, 1980; Frost et al., 1990; Hamachek, 1978; Pacht, 1984; Shafran & Mansell, 2001). The measurement of perfectionism utilised in the aetiological model, therefore, needs to be consistent with this form of negative perfectionism. The current research consensus is that perfectionism is best measured as a multidimensional

construct (e.g., Blankstein & Dunkley, 2002). The most frequently cited multidimensional measures of perfectionism, the FMPS (Frost et al., 1990) and the HMPS (Hewitt & Flett, 1991a), have both been found to possess sound psychometric properties (Enns & Cox, 2002). In order to inform clinical understanding and treatment, the present research is interested in the psychopathological form of perfectionism that is self-focused, and thus the FMPS (Frost et al., 1990) appears to be most consistent with this aim (Shafran et al., 2003).

It has been suggested, however, that the FMPS (Frost et al., 1990) subscales of PE and PC may reflect aetiological factors that confound the measurement of perfectionism (Rheume et al., 1995; Shafran et al., 2003). As the present research is investigating the aetiological factors of perfectionism, it is important to consider the PE and PC sub-scales separately from the remaining sub-scales of the FMPS, in order to form a more self-focused construct of perfectionism consistent with earlier theory and research. Therefore, the measure of perfectionism used in this research will consist of the three FMPS subscales of PS, CM and DA. The O subscale will not be included in the measure of perfectionism, as this subscale is not included in the total overall score of perfectionism on the FMPS (Frost et al., 1990). Despite certain prominent researchers believing that the PS and CM subscales are the purest measures of perfectionism on the FMPS scale (Shafran et al., 2003), some research has yielded mixed findings regarding the relationship between the FMPS subscales of PS. That is, some studies have found a relationship between PS and measures of positive perfectionism (e.g., Frost et al., 1990; 1993; Kawamura et al., 2002; Powers et al., 2005), whereas other research has found a relationship between PS and maladaptive measures of perfectionism (e.g., DiBartolo et al., 2008; Frost et al., 1994; Halmi et al., 2000). In addition to the mixed findings on the PS subscale, some authors have argued that the DA subscale essentially represents only OCD symptoms (Chik et al., 2008; Shafran & Mansell, 2001). Confirmatory factor analyses will therefore be performed in this study to determine if the three FMPS subscales of CM, DA and PS do load onto one factor of perfectionism before proceeding with the testing stage of the aetiological model.

As perfectionism has been associated with a wide range of psychological disorders, it may be useful when delineating the aetiological factors to first examine the well-established general models of anxiety. Barlow (2002) has proposed a well-accepted model for the development of anxiety disorders based on the co-ordination of triple vulnerabilities: a generalised biological vulnerability, early life experiences and specific psychological vulnerabilities. It is assumed that anxiety and other emotional disorders have a common genetic basis and that it is the co-ordination of specific environmental factors that determine the development of a specific psychological construct, such as perfectionism. Aaron Beck (1979) and Judith Beck (1995) have also suggested that the interaction of environmental factors lead to the

development of core schemas that may mediate the development of certain psychological states or compensatory beliefs, such as perfectionism.

The common generalised biological vulnerability for perfectionism may be assumed (e.g., Barlow, 1992; Tozzi et al., 2004), and thus is not directly tested in the present research, as a large-scale twin study would be required to do this reliably, which is clearly beyond the scope of this investigation. However, the identification of the environmental and cognitive aetiological factors is required before an aetiological model can be proposed. The previous review of the literature identified that the most salient aetiological factors of perfectionism are parenting factors and neuroticism. An important mediating role for cognitive schemas pertaining to constructs such as disconnection and rejection has also been theorised between the parenting and personality factors.

Parental bonding, or more specifically, Affectionless Control, appears to be the most well recognised aetiological factor that is associated with perfectionism (e.g. Enns et al., 2000; Stoeber, 1998), and thus should be included in the model. Affectionless Control is most commonly measured by the PBI (Parker et al., 1984), which has been found to possess acceptable psychometric properties (e.g., Chambers, Power, Loucks, & Swanson, 2000; Richman & Flaherty, 1986; Wilhelm et al., 2005).

In addition to parental bonding being an important aetiological factor, there is also strong theoretical consensus that parenting that is perfectionistic and demanding contributes to the development of perfectionism (e.g., Frost et al., 1991; Hamacheck, 1978). Research has provided support for this by consistently identifying a relationship between modeling of high parental expectations and perfectionism (e.g., Bandura & Dweck, 1999; Chang, 2000; Neumeister, 2004). Similarly, a consistent relationship has been found between parental criticism and perfectionism (e.g., Kawamura et al., 2002). Therefore, parental expectations and criticism also appear to play an important aetiological role in the development of the construct and will need to be included in an aetiological model of the construct. The FMPS (Frost et al., 1990) subscales of PE and PC will be used to measure these constructs in the present research as these scales have been well validated and used extensively in the perfectionism literature.

In addition to Affectionless Control and high Parental Expectations and Criticism, the personality dimension of Neuroticism has been found to have a consistent strong positive association with perfectionism (e.g., Hewitt et al., 1991; Magnusson et al., 1996). These empirical studies are supportive of early theorists who described the personality trait of Neuroticism as one of the central features that contributed to the development of

perfectionism (e.g., Burns, 1980; Freud, 1965; Pacht, 1984). The research findings concur that the personality factor of Neuroticism, as measured by the five-factor model of personality, is positively associated with maladaptive measures of perfectionism (e.g., Dunkley et al., 1997; 2004; 2006; Hill et al., 1997; Rice et al., 2007; Stumpf & Parker, 2000; Zuroff, 1994). Whereas, the personality factor of Conscientiousness, as measured by the five-factor model of personality, has consistently been found to be associated with positive, achievement striving measures of perfectionism (e.g., Dunkley et al., 2006; Hill et al., 1997; Rice et al., 2007; Stumpf & Parker, 2000).

As the current research is interested in the pathological form of perfectionism, the personality domain of Neuroticism, but not Conscientiousness will be included in the aetiological model. Neuroticism can be measured by using the Neuroticism scale on the NEO-FFI (Costa & McCrae, 1992), which is a shortened version of the NEO-PI-R, both measures being derived from the five-factor model of personality. The NEO-FFI has been found to have good psychometric properties in several studies (e.g., Holden 1992; Holden & Fekton, 1994; Roland, Parker, & Stumpf, 1998).

In addition to including parenting and personality factors in an aetiological model of perfectionism, the role of cognitive factors also needs to be considered. Many of the main cognitive theories assert that cognitive schemas play an important mediating aetiological role in the development of psychopathology (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999). Previous research and theory has provided empirical support for these models by identifying a mediating role for several of the schemas on the YSQ-SF (Young, 1998) in the relationship between parental bonding and eating disordered and depressive psychopathology (Cooper et al., 2004; Jones et al., 2005; Meyer & Gillings, 2004; Shah & Waller, 2000; Turner et al., 2004). Given the established link between perfectionism and psychopathology, it makes intuitive sense that core schemas may play a similar mediating role between parental factors and perfectionism. However, no current models of perfectionism have included core schemas as an aetiological factor. Research examining the mediating role of core schemas as a maintaining factor in the relationship between perfectionism and psychological distress has yielded mixed findings (DiBartolo et al., 2008; Park et al., 2010). Further information about the mediating role of core schemas as an aetiological factor in the development of perfectionism has the potential to facilitate case conceptualisations and treatment of psychological disorders that have perfectionism as a key component. That is, by identifying and then targeting underlying issues, this can often result in an alleviation of symptoms associated with psychological disorders.

When assessing core schemas as a possible aetiological factor in this model it is important to

use a measure that assesses a wide range of core schemas. Previous research in this area has used a measure of contingent self-worth (DiBartolo et al., 2004; 2008). However, this measure is comprised of only seven items and only measures the one core schema domain of worth. Other studies conducted by Flett et al (1991; 2008) have used the Irrational Beliefs Test (Jones, 1969) and the Survey of Personal Beliefs (Demaria et al., 1986). However, these questionnaires have been criticised for only measuring surface level cognitions or thoughts and not core schemas (Hersen et al., 1995). A study of eating psychopathology and core schemas conducted by Waller et al. (2002) found a positive association between perfectionism, as measured by the EDI-2 (Garner, 1991), and several core schemas using the YSQ (Young, 1994). The YSQ-SF was also used to measure core schemas in studies investigating their mediating role in depressive samples (Shah & Waller, 2000) and samples with an eating disorder (Jones et al., 2005; Meyer & Gillings, 2003; Turner et al., 2004). As the YSQ-SF questionnaire provides a measure of a wide range of core schemas it will be used in the present research.

The long and shortened versions of the YSQ (Young, 1994; 1998) have been found to possess good psychometric properties (e.g., Oei & Barnoff, 2007; Waller et al., 2001; Welburn et al., 2002). Moreover, the YSQ and YSQ-SF provide a measure of the schema domain of Disconnection and Rejection that is consistent with the underlying core schemas proposed in Judith Beck's (1995) model of Helplessness and Unlovability. This Disconnection and Rejection schema domain includes five core beliefs of Emotional Deprivation, Abandonment, Mistrust/Abuse, Defectiveness, and Social Undesirability/Isolation. Core beliefs pertaining to these themes have consistently been proposed by previous theorists to have a contingent relationship with perfectionism (e.g., Beck, 1979; Burns, 1980; DiBartolo et al., 2008; Glover et al., 2007; Hamacheck, 1978; Shafran et al., 2002). It would therefore be useful to study Disconnection and Rejection Core Schemas as one of the potential aetiological factors of perfectionism in the current model.

The study aimed to develop an aetiological model of perfectionism based on the salient aetiological factors identified in the literature. The overall aim of this research was to directly test the following proposed aetiological model:



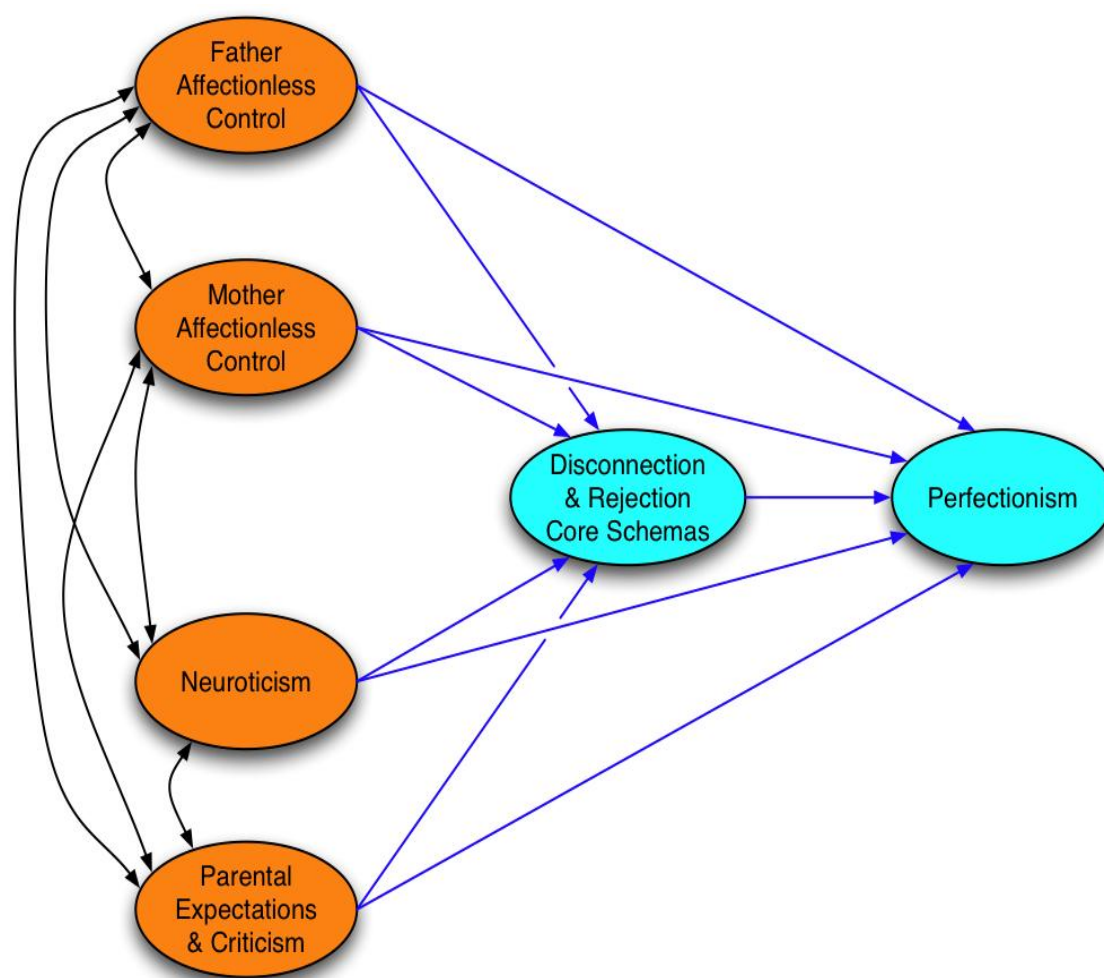


Figure 3. *Proposed Aetiological Model of Perfectionism*

The constructs in the aetiological model depicted in Figure 3, will be measured by the following questionnaires, which will be described in detail in the measures section of this chapter: Father Affectionless Control and Mother Affectionless Control will be measured by the Parental Bonding Instrument (PBI; Parker et al., 1979); Parental Expectations and Criticism will be measured by these subscales on the FMPS (Frost et al., 1990); Neuroticism will be measured by the NEO-FFI (Costa & McCrae, 1992); the Disconnection and Rejection Core Schemas will be measured by the YSQ-SF (Young, 1994); and Perfectionism will be measured by the subscales of CM, DA and PS on the FMPS (Frost et al., 1990). It is noted that Perfectionism and Neuroticism are capitalised only when referring to the measured construct in the present research.

### 2.1.1 Hypotheses

The hypotheses can be partitioned into two conceptually distinct groups: Those relating to the structural model depicted in Figure 3, and those relating to the measurement aspect of this

model. The measurement aspect of the model identifies the scales that will be used to measure each of the latent variables. The nine structural hypotheses – one for each of the nine pathways in the structural model - are listed first. Based on the research, which has consistently identified an association between Affectionless Control and perfectionism (e.g., Enns et al., 2000; Stoeber, 1998), it is predicted that:

H1: Father Affectionless control will have a direct impact on Perfectionism

H2: Mother Affectionless control will have a direct impact on Perfectionism

Based on the arguments of early theorists (e.g., Burns, 1980; Freud, 1965) and research that has consistently identified a strong association between Neuroticism and perfectionism (e.g., Hewitt et al., 1991; Magnusson et al., 1996), it is predicted that:

H3: Neuroticism will have a direct impact on Perfectionism

Based on theories proposed by authors such as Hamachek (1978) and Missildene (1963) and empirical research identifying an association between high Parental Expectations and Criticisms and perfectionism (e.g., Bandura & Dweck, 1999; Chang, 2000; Neumeister, 2004b), it is predicted that:

H4: Parental Expectations and Criticism will have a direct impact on Perfectionism

Based on findings of a positive association between core schemas and perfectionism (Waller et al., 2002) and cognitive theories (e.g., Beck, 1979; Beck, 1995; Young, 1999), it is predicted that:

H5: Disconnection and Rejection Core Schemas will have a direct impact on Perfectionism.

Hypotheses 6 to 9 are predictions regarding the indirect relationships between the latent variables and Perfectionism. These hypotheses predict that the relationship between Perfectionism and a combination of parenting and personality factors will be mediated by core schemas pertaining to Disconnection and Rejection Core Schemas. This is line with the theories suggested by Aaron Beck (1979), Judith Beck (1995) and Young (1999).

H6: Father Affectionless control will have an indirect impact on Perfectionism via Disconnection and Rejection Core Schemas

H7: Mother Affectionless control will have an indirect impact on Perfectionism via Disconnection and Rejection Core Schemas

H8: Neuroticism will have an indirect impact on Perfectionism via Disconnection and Rejection Core Schemas

H9: Parental Expectations and Criticisms will have an indirect impact on Perfectionism via Disconnection and Rejection Core Schemas

The impact of Father and Mother Affectionless Control and Parental Expectations and Criticism on Disconnection and Rejection schemas is expected to be negative. All other causal pathways are expected to be positive.

Predictions of a more informal nature can be made about the relationships among the exogenous variables (depicted by the black double-ended arrows in Figure 3). On the basis of several prominent cognitive theories that propose parenting and personality and cognitive factors interact to result in the subsequent development of psychopathology (e.g., Barlow, 2002; Beck, 1979; Beck, 1995; Young, 1999), it is predicted that (i) Father Affectionless Control and Mother Affectionless Control will be positively correlated, (ii) Father Affectionless Control and Mother Affectionless Control will both be negatively correlated with Neuroticism and Parental Expectations and Criticism, and (iii) Neuroticism will be positively correlated with Parental Expectations and Criticism.

There are four hypotheses relating to the measurement aspect of the causal model. These hypotheses relate to the dimensionality of the constructs depicted in Figure 3. Affectionless Control will be measured by the PBI (Parker et al., 1979). Based on previous research (e.g., Parker et al., 1979), it is predicted that:

H10: With reference to both mothers and fathers, the variance of item scores on the PBI can be explained in terms of two factors labeled Protection and Care

If H10 is supported, then the Affectionless Control construct will be derived from the Protection and Care subscale scores.

Neuroticism will be measured by the NEO-FFI. On the basis of previous research (e.g., Aluja, Garcia, Rossier, & Garcia, 2005; Costa & McCrae, 1992), it is predicted that:

H11: The variance of item scores on the NEO-FFI can be explained in terms of one

factor labeled Neuroticism.

If H11 is supported, then the Neuroticism construct will be measured by the NEO-FFI total score.

Perfectionism will be measured by the FMPS (Frost et al., 1990). It has been suggested that three of the subscales of the FMPS (Frost et al., 1990) - Concern over Mistakes (CM), Doubts about Actions (DA) and Personal Standards (PS) - are all associated with various measures of perfectionism (e.g., DiBartolo et al., 2008; Frost et al., 1994; Halmi et al., 2000). For example, factor analytic studies have consistently shown strong overlap between the FMPS subscales and the HMPS (Hewitt & Flett, 1991a) subscales (Bieling et al., 2004; Enns & Cox, 2002; Frost et al., 1993). However, it has been suggested that two of the FMPS subscales - Parental Expectations and Parental Criticisms - may be aetiological factors in the development of perfectionism and should therefore be studied separately to the other FMPS subscales (Rheume et al., 1995; Shafran et al., 2003). It is therefore predicted that:

H12: The variance of scores on the FMPS can be explained in terms of two higher order factors, represented in Figure 3 by the constructs Parental Expectations and Criticisms (which drives the two lower order factors of Parental Expectations and Parental Criticisms) and Perfectionism (which drives the three lower order factors of Concern over Mistakes, Doubts about Actions, and Personal Standards).

If H12 is supported, then the Parental Expectations and Criticisms construct will be measured by the Parental Expectations and Parental Criticisms subscale scores; and the Perfectionism construct will be measured by the CM, DA, and PS subscale scores.

Disconnection and Rejection Core Schemas will be measured by a subset of subscales taken from the YSQ-SF (Young, 1998). According to Young's (1999) classification of schema domains, these are the subscales that are driven by the Disconnection and Rejection Core Schemas. It is therefore predicted that:

H13: The variance of scores on the selected YSQ-SF items can be explained in terms of five factors labeled Emotional Deprivation, Abandonment/Instability, Mistrust/Abuse, Social Isolation/Alienation and Defectiveness/Shame.

If H13 is supported, then the Disconnection and Rejection Core Schemas construct will be measured by the Emotional Deprivation, Abandonment/Instability, Mistrust/Abuse, Social Isolation/Alienation and Defectiveness/Shame subscale scores.

## 2.2 Method

### 2.2.1 Participants

There were a total of 311 participants in Study One, who were predominantly individuals undergoing private psychological or psychiatric treatment. The participants were clients attending the private practices of a variety of clinical psychologists and consultant psychiatrists in Perth, Western Australia. The private practices were located in six different psychology/psychiatry practices. These practices provide psychiatric and/or clinical psychological assessment and treatment to clients experiencing a wide range of psychological disorders and problems. The practice locations are outlined in Table 4. The private practitioners were known to the researcher, who is a registered clinical psychologist, and has worked in private practice for nine years. The number of participants recruited from each practice location is outlined in Table 4.

Table 4

*Number of participants recruited from each practice location*

Practice	Percentage of Participants Recruited
Practice A	64.31% ( $n = 200$ )
Practice B	24.12% ( $n = 75$ )
Practice C	1.61% ( $n = 5$ )
Practice D	2.89% ( $n = 9$ )
Practice E	4.82% ( $n = 15$ )
Practice F	2.25% ( $n = 7$ )

Practices A and C were comprised of the independent private practices of eight psychiatrists and 14 clinical psychologists. Practice B comprised eight clinical psychologists and Practice F comprised the private practices of 10 psychiatrists. In all of these practices, the practitioners reported that approximately 90% of the clients were referred under the Australian Medicare system. This referral system requires clients to be diagnosed with one or more Axis 1 psychological disorders consistent with the DSM-IV (APA, 1994), in order to qualify for receiving a Government partial rebate for their session. It was usual practice for the client to have to pay an additional amount above the rebate, 'a gap payment', which

varied depending on the consultation fee set by the psychiatrist/ clinical psychologist. Of the remaining 10% of referrals, private practitioners reported that these clients were referred for reasons such as couple counselling, stress management or work place conflicts, which did not qualify as an Axis 1 disorder and therefore did not qualify for the Government rebate.

Practice D is a voluntary in-patient and day-patient psychiatric clinic that provided psychiatric/psychological assessment and group and individual therapy to clients referred for a wide range of psychological disorders. Practice F is a University based service that provides psychological assessment and intervention to the staff and students. This is a free service attended on a voluntary basis by clients with a wide range of psychological issues that may or may not be related to their academic studies or work.

The demographic details of the 311 participants are outlined in Table 5.

Table 5

*Demographic characteristics of the participants in Study 1(N =311)*

Age	N = 36.35 (SD = 12.59)
Gender	
Males	N = (25.37%)
Females	N = (74.63%)
Employment	
Full time work	N = (39.87%)
Part time work	N = (16.67%)
Currently not working	N = (22.55%)
Not specified	N = (20.92%)
Relationship Status	
Single	N = (50.94%)
Married	N = (36.22%)
Living together but not married	N = (13.96%)
Average Number of Children	N = 2.06 (SD = 1.19)

The information reported in Table 5 indicates that the average age of the participants was 36 years old; that there were more females than males; that the majority of participants worked full time; and that the majority of the sample was single. These demographics are consistent with those reported in studies using a sample attending psychological therapy in private practice (e.g., Persons, Bostrom & Bertagnolli, 1999) and in a study using a clinical sample that had high levels of perfectionism (e.g., Egan, 2005).

Details regarding the participants' attendance of current and previous therapy are outlined in Table 6.

Table 6

*Participation in current and previous therapy*

Number of sessions with current therapist	N = 39.74 ( <i>SD</i> = 73.03)
Previous therapy	
Previous therapy attended	N = (57.56%)
No previous therapy attended	N = (27.96%)
Not specified	N = (14.47%)
Number of previous therapy sessions	N = 68.56 ( <i>SD</i> = 127.87; <i>Range</i> = 1 – 400)

Results in Table 6 indicate that the participants were attending longer-term therapy, with an average of 39 sessions with their current treating clinical psychologist/psychiatrist. This number of average sessions is higher than the usual number of 8-12 sessions in randomised controlled trials (e.g., Riley et al., 2007). This number of average sessions is also higher when compared to other studies that have used private practice samples. For instance, an average number of 17 sessions was reported by Murphy, Simons, Wetzel and Lustman (1984) in the treatment of depression. Similarly, an average number of 18-24 sessions was reported by Persons, Burns and Perloff (1988) depending on whether clients dropped out or completed treatment for depression respectively. However, the average number of sessions in this study is consistent with a study conducted on a similar sample by Persons et al. (1999) who reported the average number of 32 sessions was reported in private practice settings when psychological therapy was open ended. There is clearly a wide range of sessions completed in private practices and this likely depends on the nature and severity of the clients attending the practices. Indeed, the clinicians in the present sample reported that the average length of treatment was determined by the co-morbidity and greater complexity of psychological issues given that the majority of referrals were made by psychiatrists. The clinicians reported that a typical client attending their practice would be diagnosed with an average of four or five psychological diagnoses under the DSM-IV or ICD-10 diagnostic classification system. The majority of the participants had previously attended therapy with an average attendance of 68 sessions.



## 2.2.2 Measures

### 2.2.2.1 Demographic questionnaire

All participants answered standard questions about demographics and their attendance of therapy (see Appendix A for a copy of the questions).

### 2.2.2.2 Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990)

The FMPS is a 35-item self-report questionnaire that yields an overall perfectionism score as well as sub-scale scores for six dimensions of perfectionism: (i) CM, (ii) PS (iii) PE (iv) PC (v) DA and (vi) O. Each question uses a 5-point likert scale ranging from ‘strongly disagree’ to ‘strongly agree’. An example of an item is “If I fail partly, it is as bad as being a complete failure”. The score range is from 35 – 145, with higher scores indicating a higher degree of perfectionism. The sub-scale score of Organisation is the only sub-scale excluded when calculating the total perfectionism score due to the low correlations observed with the other sub-scales and measures of perfectionism (Frost et al., 1990).

The FMPS scale has been found to have good psychometric properties, with internal consistency of the six sub-scales ranging from .77 to .93 (e.g., Frost et al., 1990; 1993). Frost et al. (1990) reported a high internal consistency of the overall scale ( $\alpha = .90$ ). Parker and Stumpf (1995) also found that the internal consistency for the FMPS ranged from .67 for the DA sub-scale to .90 for the O subscale. Test re-test reliability of the FMPS has also been demonstrated to be high in two studies using Chinese undergraduate students. Alpha coefficients were found to be between .63 and .82 on a sample of 1280 students (Fei & Xu, 2006) and the four-week test-retest reliability was found to be .77 for a sample of 740 students (Yang, 2007).

In their literature review on measures of perfectionism, Enns and Cox (2002) concluded that the FMPS had adequate construct, concurrent and discriminant validity. For example, Frost et al. (1993) found construct validity to be high on the three sub-scales measures of PS ( $r = .83$ ); CM ( $r = .88$ ) and DA ( $r = .77$ ).

The FMPS also has good convergent validity with other measures of perfectionism. A strong correlation has been found between the FMPS and the Burns Perfectionism Scale (Burns, 1980). Frost et al. (1993) performed a comparison of the FMPS with the other widely used measure of multi-dimensional perfectionism, the HMPS (Hewitt & Flett, 1991a) and found considerable overlap between the two measures (Frost et al., 1993). The FMPS Personal Standards dimension was closely correlated with the SOP dimension of the HMPS ( $r = .62$ ).

The FMPS dimensions of PC, PE and CM were all equally associated ( $r = .49$ ) with the HMPS dimension of SPP.

Good criterion-related validity has also been demonstrated for the FMPS as the total perfectionism score, and as the CM and DA sub-scales have also been found to be significantly associated with a number of psychological symptoms, including depression (e.g., Minarik & Ahrens, 1996), eating disorders (e.g., Bastiani et al., 1995), OCD (e.g., Frost & Steketee, 1997), and social anxiety (e.g., Juster et al., 1996).

Whilst Frost et al. (1990) and Parker and Atkins (1995) confirmed the six-factor solution, more recent research by Stoeber (1998) and Purdon, Antony and Swinson (1999) has found the FMPS may be better considered as having the following three factor solution (i) Personal Standards (ii) Concern over Mistakes and Doubts and (iii) Parental Expectations and Criticisms. The psychometric properties and factorial structure of the FMPS has been reviewed in detail in the introduction section of this research and therefore will not be focused on in detail in this section. See Appendix B for a copy of the FMPS.

#### **2.2.2.3 Young Schema Questionnaire – Short Form (YSQ-SF; Young, 1998).**

The YSQ-SF is a 75-item self-report questionnaire based on the 205-item Young Schema Questionnaire (YSQ; Young, 1990) that measures the extent to which 15 early maladaptive schemas are present. In their review of the YSQ-SF, Oei and Baranoff (2007) reported that the 75 items were chosen to reflect the 15 maladaptive schemas that were identified in the principle components analysis conducted by Schmidt, Joiner, Young and Telch (1995) using a clinical population. Each of the 15 factors was represented by 5 questions that were selected on the basis of having the highest factor loading scores (Schmidt et al., 1995 cited in Waller et al., 2001). Each item is rated using a six-point Likert-type scale (1 = completely untrue of me; 2 = mostly untrue of me; 3 = slightly more true than untrue; 4 = moderately true of me; 5 = mostly true of me; 6 = describes me perfectly). Higher scores are reflective of a greater presence of that early maladaptive schema for the respondent (Welburn et al. 2002). The maladaptive schemas measured by the YSQ-SF are Emotional Deprivation, Abandonment/Instability, Mistrust/Abuse, Social Isolation/Alienation, Defectiveness/Shame, Failure, Dependence/Incompetence, Vulnerability to Harm or Illness, Social Undesirability, Subjugation, Self-Sacrifice, Emotional Inhibition, Unrelenting Standards, Entitlement and Insufficient Self-Control/Self-discipline. The score for each schema/scale is the mean score of the 5 questions that comprise each scale. The YSQ-SF was selected instead of the YSQ because it reduces the number of items the participants need to complete.

The YSQ-SF (Young, 1998) has been found to have good internal consistency. Waller et al. (2001) reported an alpha of .96 for the YSQ-SF total score in a sample of female participants diagnosed with eating disorders. Waller et al. also reported an alpha of .92 in a non-clinical group of participants. Each subscale had an alpha greater than .8 in the combined sample of clinical and non-clinical participants. Similarly, Stopa, Thorne, Waters and Preston (2001) reported that all 15 scales on the YSQ-SF had alphas greater than .7, with alphas for 10 of the subscales being greater than .8. In Waller et al.'s study, there was no discernable pattern of alpha values between the short and long forms of the YSQ, which indicates that the YSQ-SF possesses good internal consistency of items with the YSQ (Oei & Baranoff, 2007). Baranoff et al. (2006) reported relatively high alpha values for separate student populations from Korea (.94) and Australia (.96). Glaser et al. (2002) evaluated the internal consistency of the 18 subscales in among 188 clinical outpatients and found alpha coefficients ranging between .71 and .93.

Welburn et al. (2002) calculated alpha coefficients for each of the 15 subscales of the YSQ-SF (Young, 1998) using a psychiatric day-patient population. Alpha coefficients ranged from .76 to .93. In particular, alpha coefficients for the subscales comprising the higher order factor of Disconnection and Rejection Core Schemas – i.e., the subscales used in the present study - were .91 for Abandonment/Instability; .91 for Mistrust/Abuse; .90 for Emotional Deprivation; .92 for Social Isolation/Alienation and .92 for Defectiveness/Shame.

Waller et al. (2001) examined the discriminant validity for the YSQ-SF in a sample of 60 women who met the DSM-IV criteria for bulimia, and 60 women who had no known psychiatric diagnosis. It was found that the YSQ-SF produced a significant discriminant function for subscales of Defectiveness/Shame and Insufficient Self-Control.

The predictive validity of the YSQ-SF (Young, 1998) has been established in four studies. Waller et al. (2001) identified that the predictive power for the YSQ-SF was significant in their sample of females who met diagnostic criteria for bulimia. Welburn et al. (2002) found that the Abandonment/Instability subscale and the Insufficient Self-Control subscale of the YSQ-SF uniquely accounted for 12.5% and 5.5% of the variance in depression as measured by the Brief Symptom Inventory (BSI; Derogatis & Melisaratos 1983) in a clinical sample of 202 participants. Similarly, Glaser et al. (2002) found that 54% of the variance in BDI-II Scores (Beck et al., 1996) could be accounted for by YSQ-SF scores. However, Glaser et al. acknowledged that the small size and homogeneity of their sample limits the generalisability of their findings. Finally, Baranoff et al. (2006) reported that 44% of the variance of BDI-II scores was accounted for by YSQ-SF scores. In particular, the subscales of Insufficient Self-control, Failure and Social Isolation/Alienation were significant predictors of BDI-II scores.

The results of Welburn et al.'s (2002) factor analysis provided evidence for the construct validity of the YSQ-SF (Young, 1998). They reported that five of the schemas (Abandonment/Instability, Failure, Self-Sacrifice, Vulnerability to Harm and Emotional Inhibition) were significantly related to anxiety as measured by the BSI (Derogatis & Melisaratos, 1983). The schemas of Abandonment/Instability and Insufficient Self-Control were significantly related to Depression. The schemas of Mistrust/Abuse, Vulnerability to Harm, Self-Sacrifice and Insufficient Self-Control were significant predictors of paranoia. Finally, it was found that the subscale of Vulnerability to Harm predicted anxiety and paranoia as measured by the BSI but not depression, which provided evidence for the subscale's divergent validity.

Evidence of criterion-related validity was also reported by Calvette et al. (2005) who found patterns of associations between the YSQ-SF (Young, 1998) subscales and symptoms of affective disorders and automatic thoughts. Of particular relevance to the present study, the subscale of Abandonment/Instability was significantly associated with anxiety disorders ( $r = .17$ ); the Defectiveness/Shame subscale was significantly associated with depression ( $r = .25$ ); the Mistrust/Abuse subscale was significantly associated with anger ( $r = .28$ ); and the Defectiveness/Shame subscale was significantly associated with self-concept thoughts ( $r = .32$ ) and negatively associated with positive thoughts ( $r = -.48$ ). Finally, Thorne et al. (2001) compared the YSQ-SF with the YSQ (Young, 1994) and suggested that the criterion and construct validity of the YSQ-SF may be extrapolated from the research on the YSQ that has demonstrated good psychometric properties (e.g., Ball & Cecero, 2001; Schmidt et al., 1995; Schmidt & Joiner, 2004; Young, 1999).

Oei and Barnoff (2007) performed a comprehensive literature review of the YSQ-SF and reported that Welburn et al. (2002) published the first factor analysis of the YSQ-SF. Welburn et al. concluded that the 15-factor structure of the YSQ-SF was supported for use in a clinical population. Calvete, Estevez, Lopez de Arroyabe and Ruiz (2005) conducted a confirmatory factor analysis (CFA) on a Spanish version of the YSQ-SF and found that the 15-factor provided a good fit to the data.

Two studies have failed to find a 15-factor solution for the YSQ-SF. Baranoff, Oei, Kwon and Cho (2006) conducted a CFA on separate samples of Korean and Australian students and found that a 13-factor solution provided a better fit than the 15-factor solution. Chavallet, Mauchand, Cottraux, Bouvard and Martin (2006) performed a CFA on a non-clinical sample of undergraduates and senior executives in France. They found that 13 of the original 15 schemas proposed by Young (1999) emerged as independent factors. The schemas of

Entitlement and Insufficient Self-control did not emerge as separate factors but instead combined to form a 14th factor that they termed Impaired Limits. However, these inconsistent findings may be due to using a non-clinical sample and therefore need to be interpreted with caution.

There have been inconsistent findings when analysing the higher-order domains of the YSQ-SF (Young, 1998). Young (1999) identified five higher-order domains in the original 18 subscales that he had identified. The Disconnection and Rejection Core Schemas (comprised of the Emotional Deprivation, Mistrust/Abuse, Abandonment/Instability, Defectiveness/Shame and Social Isolation/Alienation subscales); The Impaired Autonomy domain (comprised of the Dependence, Vulnerability to Danger, Enmeshment, and Failure subscales); the Impaired Limits domain (comprised of the Entitlement and Insufficient Self-Control subscales); the Other-directedness domain (comprised of the Subjugation, Self-Sacrifice and Approval Seeking subscales) and finally the Overvigilance and Inhibition domain (comprised of the Vulnerability to Error, Overcontrol, Unrelenting Standards, and Punitiveness subscales).

In the present study, the higher-order factor Disconnection and Rejection Core Schemas is of the most interest as it is considered to underlie the development of contingent schemas that are similar to perfectionism (Young, 1999); is the most similar in content to Judith Beck's (1995) beliefs regarding Unlovability and Helplessness; and intuitively would be the most likely of the schema domains to contribute to the development of perfectionism as a way of compensating for feelings of abandonment, defectiveness, abuse, emotional deprivation and social isolation. Using an Australian clinical sample, Lee, Taylor and Dunn (1999) identified a 15-factor solution for the YSQ-SF, but found that a solution with five higher-order domains fit the data better. However, in addition to the five subscales of Abandonment/Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness, and Social Isolation/Alienation, Lee et al. (1999) found that a sixth subscale of Emotional Inhibition also comprised the higher-order domain of 'Disconnectedness'. However, Cecero et al. (2005) reported that the higher order domain of Disconnection and Rejection Core Schemas was comprised of subscales of Mistrust/Abuse, Emotional Deprivation, Social Isolation/Alienation, and Emotional Inhibition. The subscale of Abandonment/Instability, however, formed part of a higher order domain referred to as Impaired Autonomy.

Therefore, a review of the studies using confirmatory factor analyses (CFA) with the YSQ-SF (Young, 1998) indicate that the 15-factor model is supported in clinical populations, but a 13-factor model may be more appropriate for use in a student population. Given that higher order domains of the YSQ-SF have received inconsistent support, however, the present

research will establish that the five subscales of interest: Abandonment/Instability, Emotional Deprivation, Defectiveness/Shame, Mistrust/Abuse and Social Isolation/Alienation, do form a higher order factor of Disconnection and Rejection Core Schemas, as identified by Young (1999), prior to proceeding with testing the aetiological model. See Appendix C for a copy of the YSQ-SF.

#### **2.2.2.4 Parental Bonding Instrument (PBI; Parker et al., 1979).**

The PBI is derived from attachment theory and completed retrospectively for the first 16 years of a person's life. It aims to measure the overall perception of parenting and to assess interactions between the parent and child as the child grows up. Therefore, it measures not only bonding, but also perceptions of parenting, modeling and the family environment that have been identified to be important factors in the development of perfectionism. Parker, Tupling and Brown (2008) state that the majority of other measures of child/parent relationships stemming from attachment theory require a large administration and scoring time, as they are often observational or interview based. In contrast, the PBI is a 25-item self-report questionnaire. Each item describes a behaviour or an attitude for parents and is scored on a 4-point-likert-type scale ranging from 1 (very unlike) to 4 (very like). The PBI measures maternal and paternal bonding separately. The respondent completes one form of the PBI for each parent, according to their recollection of each parent during their first 16 years.

Parker et al. (1979) identified two separate dimensions on the PBI. The Parental Care dimension (12 items) is a measure of perceived parental warmth and affection versus perceived coldness and rejection. The Parental Protection dimension (13 items) is a measure of the extent to which the person perceived they were encouraged to develop autonomy compared to the extent they believed they were overprotected. When the subscale scores are combined, parenting styles can be classified into four groups (Parker et al., 2008). Affectionless Control (low care and high protection); Affectionate Constraint (high care and high protection); Optimal Parenting (high care and low protection); and Neglectful Parenting (low care and low protection). A negative correlation between scores on the Care and Protection scales has consistently been found in the initial and subsequent studies by Parker et al., making it clear that these scales are interdependent dimensions (Parker, 1989).

The PBI has consistently been shown to be a reliable instrument (e.g., Chambers, Power, Loucks, & Swanson, 2000). The internal consistency of the Care and Protection scales for both maternal and paternal bonding, as measured by alpha coefficients, has been rated between .89 and .91 (Stoeber, 1998). Richman and Flaherty (1986) reported high alphas for

Maternal Care (.91), Paternal Care (.93), Maternal Protection (.88) and Paternal Protection (.87) in a US sample of 153 medical students. Similarly, Zenmore (1989) reported high coefficient alphas for the maternal and paternal subscales on the PBI ranging from .80 to .93 for females students and from .81 to .89 for male students. Parker et al. (1979) also reported split-half reliability coefficients of .88 for the Care scale and .74 for the Protection scale of the PBI in their original non-clinical sample. Intra-class correlations were greater than .68 over a period of 90 months in a sample of outpatients diagnosed with depression (Lizardi & Klein, 2005).

Test-retest reliability for the PBI was found to be adequate for both the Care scale ( $r = .76$ ) and the Protection scale ( $r = .63$ ) (Parker et al., 1979). The PBI has been demonstrated to have long-term stability as measured by test-retest reliability ratings ranging from .59 to .75 over a 20-year period in a non-clinical sample (Wilhelm, Niven, Parker, & Hadzi-Pavlovic, 2005). In a general population study in Australia conducted by Mackinnon, Henderson and Scott (1989) internal consistency coefficients were reported to range between .87 and .94 for the PBI scales. The four-week test-retest reliabilities for this sample ranged between .89 and .95, suggesting that the Care and Protection constructs are strongly homogeneous (Parker, 1989). Similar test-retest reliabilities, ranging between .90 and .96 at a 4-6 week retest interval, have been found with a U.S. sample of depressed outpatients (Plantes, Prusoff, Brennan, & Parker, 1988). Six-month test-retest reliability coefficients ranging between .78 and .85 on the PBI scales have been found in participants with anxiety and depression (Gerlsma, Arrindell, Van der Veen, & Emmellkamp, 1991).

The PBI has good discriminatory ability in many areas of psychological distress including depression, anxiety, schizophrenia, panic disorder and delinquency (Mak, 1994; Parker 1981; Parker et al., 1982; & Silvone et al., 1991). Parker et al. (1979) reported that each dimension of the PBI had significant correlations with ratings on the same dimensions that were based on interviews. In addition, scores on the PBI do not appear to be influenced by personality traits or affective state. Lizardi and Klein (2005) reported that scores on the PBI remained relatively stable in a sample of outpatients diagnosed with depression who reported that their depressed mood changed significantly over 90 months. Wilhelm et al. (2005) found that over a 20-year-period the PBI scores were not affected by fluctuations in depression and Neuroticism.

Lopez and Gover (1993) concluded that numerous studies have also provided support for the validity of the PBI by identifying significant relationships with parental representations and current parent-child conflict (e.g., Mackinnon, Henderson, Scott, & Duncon-Jones, 1989); working alliance rated by counselors (Mallinckrodt, 1991); and with perceptions of social

support (Sarason, Sarason, & Shearin, 1986). Furthermore, support is provided that the PBI measures actual, and not just imagined, parental behaviours through studies showing that siblings ratings of their parents covary and mother's ratings of themselves also covary with their children's ratings of them (Parker, 1983). Twins tend to score parents more similarly than siblings who are not twins (Mackinnon et al., 1989; Parker 1986). Parker (1986) found that the mean correlation coefficients for the PBI scales were almost the same for a group of monozygotic ( $r = .70$ ) and dizygotic twins ( $r = .71$ ), which provides strong support for the validity of the PBI given the presumed similarities in the parenting of twins.

Several factor analyses of the PBI have identified the two original factors of Care and Protection. For example, Kazarian, Baker and Helmes (1987) re-examined the factor structure of the PBI in a sample of 49 out-patients diagnosed with schizophrenia. Using a principal components analysis, a two-factor solution was identified, with the first two components accounting for 47 percent of the total variance for mothers and 40 percent of the total variance for fathers. Kazarian et al.'s (1987) results were consistent with the original two-factor solution found in Parker et al.'s (1979) study, with the alpha coefficients for items in the two studies ranging between .91 and .99 (Parker, 1989). Arrindell et al. (1989) also confirmed the original two-factor solution in a Dutch sample. They reported that the two components accounted for 41 to 44 percent of the total variance in the maternal data and 41 to 42 percent of the total variance in the paternal data.

In contrast to Parker et al.'s (1979) original findings, several studies have examined the factorial structure of the PBI and identified that a three-factor solution seems to fit the PBI best. Whilst the first PBI factor of Care (comprised of 12 items) is consistently identified as a factor in most studies, the second factor of Protection has been identified in two studies to be better suited as two separate factors of Protectiveness and Authoritarianism. For example, Kendler (1996) used a 16-item version of the PBI in epidemiological research and found that three the factors of Care, Protectiveness and Authoritarianism emerged. Similarly, the same three-factor solution has also been identified in epidemiological research using an eight-item version of the PBI (Cox et al., 2000; Enns et al., 2002). The three-factor model of the PBI has been found to also have good psychometric properties (Cox et al., 2002; Lizardi & Klein, 2005).

Given that many studies showing a three-factor solution for the PBI have used a modified version of the PBI for epidemiological research and that a two-factor solution has been consistently identified in the literature using the 25-item PBI, it would appear that a two-factor solution PBI would likely be identified in the present research. However, given the inconsistent findings as to whether a two-factor or three-factor solution provides the better fit,



it is important to test both models using the current clinical PBI data. See Appendix D for a copy of the PBI.

#### **2.2.2.5 NEO-FFI (Costa & McCrae, 1992)**

The NEO-FFI is a 60-item shortened version of the NEO-PI-R, which is a five-factor measure of personality based on the widely accepted and validated trait theory of personality that has identified five broad domains. These domains are Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness (Costa & McCrae, 1992). This five-factor theory has arisen from numerous factor analyses of personality measures using a wide range of samples (e.g., McCrae & Costa, 1987; Watson, Clark, & Harkness, 1994). In the current study, the NEO-FFI has been selected instead of the NEO-PI-R to reduce the number of questions the clients will be asked to answer, given the numerous measures included in the questionnaire battery. Costa and McCrae constructed the NEO-FFI by selecting the 12 items with the highest negative and positive factor loadings on all five of the factors (Rice, Ashby, & Slaney, 2007). The NEO-FFI has been found to have good psychometric properties in numerous studies. For example, the NEO-FFI has been found to have alpha reliability coefficients ranging from .62 to .87 (Costa & McCrae, 1992; Holden, 1992; Holden & Fekton, 1994; Roland et al., 1998). As identified in the literature review, the personality factor of Neuroticism is the only factor that has consistently shown a significant association with self-oriented measures of perfectionism. Therefore, only the Neuroticism subscale will be used in the present research.

Costa and McCrae (1992) define Neuroticism as the extent to which people are worried and sensitive versus being secure and calm. The Neuroticism sub-scale of the NEO-FFI is comprised of 12 items relating to the six facets of anxiety, depression, impulsiveness, vulnerability, angry-hostility and self-consciousness. Each item uses a five-point likert-type scale ranging from 0 (strongly disagree) to 4 (strongly agree). An example of a question is “I often get angry at the way people treat me”. Total scores range between 0 and 48 with higher scores indicating a higher degree of Neuroticism. Costa and McCrae (1992) state that a low level of Neuroticism indicates that the person is hardy, secure and usually relaxed under stressful conditions. In contrast, a high level of Neuroticism indicates that the person is emotional, sensitive and prone to experience feelings that they perceive as upsetting.

The NEO-FFI has been found to have good psychometric qualities across many cultures. Costa and McCrae (1992) reported alpha coefficients ranging between .68 and .86 in an American sample. In an analysis of the psychometric properties of the German version of the NEO-FFI, alpha coefficients ranged between .66 and .84 (Schmitz, Hartkamp, Baldini,

Rollnik, & Tress, 2001). Egan, Deary and Austin (2000) obtained alpha coefficients of between .72 and .87 in a sample of 1025 British adults. Rolland, Parker and Stumpf (1998) analysed the psychometric properties of the French version of the NEO-FFI and reported alpha coefficients between .62 and .84, and between .50 and .84 in French university student and military samples, respectively.

Good psychometric properties have also been reported for the Neuroticism scale specifically. Aluja, Garcia, Rossier and Garcia (2005) obtained alpha coefficients of .85 and .82 for the Neuroticism scale of the NEO-FFI in a sample of 1090 Swiss participants and 1006 Spanish participants respectively. Schmitz et al. (2001) reported internal consistency for the Neuroticism scale of .84 for a clinical sample of 950 participants who completed the German version of the NEO-FFI.

Two studies have examined the test-retest reliability of the NEO-FFI using a subset of the college sample who completed the NEO-PI-R (Costa and McCrae, 1992) as well as the NEO-FFI three months earlier. Temporal stability of the five NEO-FFI scale scores could be estimated by selecting appropriate items from the NEO-P-R (Murray, Rawlings, Allen, & Trindler, 2003). The test-retest reliability coefficient for the Neuroticism scale was .79. However, Murray et al. (2003) noted two limitations to these estimates. Firstly, when assessing stability in personality studies, time periods of less than one year can be considered short-term and artificially inflate test-retest correlations (Schuerger, Zarella, & Hotz, 1989). Secondly, college students may have a lower stability of personality than adults who were older (Roberts, Caspi, & Moffitt, 2001). Therefore, Murray et al. examined the test-retest reliability of the NEO-FFI in an Australian community sample of 335 participants. A decrease was noted for all five scales in the test-retest reliability scores across 30 months, however they remained significant across this time span. The test-retest coefficient for Neuroticism at 30 months was .75.

Good convergent validity for the NEO-FFI has been reported by Costa and McCrae (1992). They found that the NEO-FFI accounts for approximately 85% of the variance in convergent validity criteria based on data derived from spouse and peer ratings and ratings of similar personality traits using adjective endorsement (Egan et al., 2000). See Appendix E for a copy of the Neuroticism questions reproduced from the NEO-FFI.

#### **2.2.2.6 Procedure**

This research program was approved by the Curtin University Human Research Ethics Committee. The researcher approached clinical psychologists and consultant psychiatrists working in private practices in Perth and clinical psychologists working at the Curtin

University Counselling Service. These practitioners and/or their receptionists were asked to invite the clients attending their practice to complete a questionnaire battery and return it to the receptionist at their next consultation or to return it to the researcher via a reply-paid envelope. Questionnaires returned to reception staff were placed in a sealed box and returned to the researcher. The researcher did not approach her own clients. The questionnaire battery contained the FMPS, PBI, YSQ-SF and NEO-FFI. The four questionnaires were put together in random order in each questionnaire battery to avoid an order bias. The clients were informed that their participation was anonymous and that their clinician would not be aware whether or not they completed the questionnaire and would not be able to view the results of their questionnaire (see Appendix F for a copy of the informed consent form). However, if they preferred, participants could provide their name and therapist details if they wanted their therapist to obtain the results of their questionnaire, which was provided along with the norms for each questionnaire. Participants were given a \$2 scratch and win lottery ticket as a token gesture of appreciation for their time and effort. Approximately 800 questionnaires were distributed to clients, with 311 being returned, providing a response rate of 38.9 percent.

### **2.2.3 Data Analysis**

#### **2.2.3.1 Descriptive statistics**

The means and standards deviations for each of the subscales on the FMPS (Frost et al., 1990) found in this study are presented in Table 7. As there are no severity cut-off scores for the FMPS, the means and standard deviations for three comparative studies that also reported on FMPS are included. The three studies were chosen as they represented different clinical populations, which is useful when comparing the means of the present mixed clinical sample. Buhlmann, Etcoff, and Wilhelm (2008) reported on mean FMPS subscale scores in a sample of 21 participants diagnosed with OCD. Antony et al. (1998) calculated mean scores from a sample of 44 participants diagnosed with panic disorder. Lastly, Halmi et al. (2000) calculated the mean FMPS subscales on 145 participants diagnosed with restricting anorexia. It can be seen that the FMPS means in the present study are consistent with the scores reported in research using a range of clinical populations.

Table 7

*Frost Multidimensional Perfectionism Scale: Means and standard deviations for the current research and three comparative clinical populations*

Frost Multidimensional Perfectionism Sub-scales	Current Research	Buhlmann et al. (2008)	Antony et al. (1998)	Halmi et al. (2000)
Personal Standards	24.97 (5.37)	25.40 (8.40)	22.7 (4.3)	27.6 (6.5)
Concern Over Mistakes	28.35 (8.18)	24.95 (9.40)	24.1 (8.2)	31.8 (9.6)
Doubts about Actions	13.05 (3.58)	15.00 (3.83)	10.0 (3.3)	12.9 (4.0)
Parental Expectations	15.37 (4.99)	14.80 (5.74)	14.1 (5.5)	14.3 (6.1)
Parental Criticisms	12.27 (4.47)	9.60 (5.23)	9.7 (4.6)	10.7 (4.8)

The means and standard deviations for the remaining questionnaires are reported in Table 8. When comparing the mean scores in the present study to the severity cutoffs for the PBI (Parker et al., 1979), the scores for both the mother and father Care subscale are categorised as ‘high’. Furthermore, the scores for the mother and father Protection subscale are categorised as ‘low’. Hence, the mean scores on both mother and father bonding would be classified as falling within the Affectionless Control quadrant. In regard to the NEO-FFI (Costa & McCrae, 1992), the mean Neuroticism score would be classified as in the ‘high’ and ‘very high’ range for females and males respectively. For the purposes of SEM, the YSQ-SF (Young, 1998) subscales needed to be calculated as a numerical value. The mean scores on the YSQ-SF are consistent with those reported in previous studies using an Australian sample of 433 participants in private practice and community hospitals (Lee et al., 1999) and in a sample of 75 women diagnosed with bulimic disorders (Waller et al., 2002). Overall, it can be seen that the mean subscale scores of the population in the present study are consistent with those reported in a range of clinical populations and above average when compared to severity cut-off scores of the NEO-FFI.

Table 8

*Means and standard deviations for the relevant subscales of the PBI; NEO-FFI and YSQ-SF*

Measure	Mean	SD
PBI Father Care	17.14	9.05
PBI Father Protection	16.85	8.29
PBI Mother Care	21.21	9.94
PBI Mother Protection	21.21	9.94
NEO-FFI Neuroticism	31.94	8.88
YSQ-SF Emotional Deprivation	3.32	1.54
YSQ-SF Abandonment/Instability	3.09	1.51
YSQ-SF Mistrust/Abuse	3.06	1.47
YSQ-SF Defectiveness/Shame	3.43	1.46
YSQ-SF Social Isolation/Alienation	2.82	1.49

Note. a. PBI = Parental Bonding Inventory (Parker et al., 1979); b. NEO-FFI = Neuroticism Extraversion Openness to Experience Five Factor Inventory (Costa & McCrae, 1992); c. YSQ-SF = Young Schema Inventory – Short Form (Young, 1998)

### 2.2.3.2 Overview of the SEM analysis

Structural equation modelling (SEM) techniques – implemented through LISREL (Version 8.54; Jöreskog & Sörbom, 2003) - were used to test the structural model presented in Figure 3. Sample size considerations dictated that the analyses be comprised of four conceptually distinct stages.

#### **Stage 1: Conduct confirmatory factor analyses (CFAs) to determine the dimensionality of each scale**

A CFA was conducted on each of the five scales – PBI Mother, PBI Father, the Neuroticism scale of the NEO-FFI, FMPS, and YSQ-SF – in order to determine whether the multifactor structure that has been proposed for each scale provided a better fit than a more parsimonious one-factor structure. The CFA results were then be used to formulate the measurement component of the model.

**Stage 2: Test the measurement model**

The results from Stage 1 were used to formulate the measurement component of the aetiological model of perfectionism. The measurement model was then tested.

**Stage 3: Test the structural model**

After testing the measurement model to see if it was an adequate fit to the data, the structural model (Figure 3) was then tested.

**Stage 4: Compare different versions of the structural model**

The alternative structural models suggested by the Stage 3 analysis were compared to determine which one provided the best fit.

**2.2.3.3 Assumption testing for SEM**

The four assumptions of SEM: multivariate normality, linearity, multi-collinearity and independence of observations will be discussed in turn.

**Multivariate normality**

SEM techniques assume that the measures being analysed are multivariate normal (Kline, 1998). At Stage 1, the assumption of multivariate normality applies to the items from the questionnaires. At Stages 2, 3, and 4 the assumption applies to the factors derived from the Stage 1 CFAs, which were subsequently used as indicators in the Stage 2 measurement model (see Figure 4). Multivariate normality was violated at all four stages, which means that the chi-square statistic that is normally used to test model fit will be inflated (Joreskog & Sorbom, 1989). In these circumstances, Joreskog and Sorbom (1989) recommend testing for model fit with a chi-square statistic that corrects for the inflation. Joreskog (2004) argues that the Satorra-Bentler chi-square provides such a statistic, and therefore, this was used as the fit statistic at all stages of analysis.

**Linearity**

Linearity is satisfied when the relationships among the measures are essentially linear rather than curvilinear. At Stage 1, the measures under consideration are the questionnaire items. No serious departures from linearity were observed in a random selection of the 1561 scatterplots derived from the 25 PBI father items (300 scatterplots), the 25 PBI mother items (300 scatterplots), the 35 FMPS items (595 scatterplots), the 25 YSQ-SF items (300 scatterplots), and the 12 NEO items (66 scatterplots).

At Stages 2 to 4, the linearity assumption applies to the 13 indicators – 11 questionnaire subscales and two dichotomous measures - that were included in the measurement model. No serious departures from linearity were observed in a random selection of the 78 scatterplots derived from the 13 indicators.

### **Multicollinearity**

Multicollinearity exists when there are substantial correlations among measures. At Stage 1, the measures in question are the questionnaire items. In order to determine whether there were substantial correlations among questionnaire items, a tolerance value for each item was computed. Long (1983) stated that an item's tolerance value indicates the degree to which the item does *not* correlate with the other items in the questionnaire. If an item has a *low* tolerance value, then it is *highly* correlated with the other items in the questionnaire indicating a multicollinearity problem. It has been suggested that multicollinearity may be a problem if the smallest tolerance value is less than .1 (e.g., Bowerman & O'Connell, 1990, Myers, 1990; cited in Stevens, 1992). For each of the five questionnaires - PBI father, PBI mother, NEO-FFI, FMPS, and YSQ-SF – item tolerance values were sufficiently high (see Table 9) ruling out any serious multicollinearity problems for the Stage 1 analyses.

Table 9

*Tolerance Values Across Items for Each Questionnaire (N=311)*

Questionnaire	Range of item tolerance values
PBI father	.301 - .702
PBI mother	.254 - .656
NEO	.451 - .793
FMPS	.203 - .684
YSQ-SF	.170 - .389

Note. a. PBI = Parental Bonding Inventory (Parker et al., 1979); b. NEO-FFI = Neuroticism Extraversion Openness to Experience Five Factor Inventory (Costa & McCrae, 1992); c. FMPS = Frost Multidimensional Perfectionism Scale (Frost et al., 1990); d. YSQ-SF = Young Schema Inventory – Short Form (Young, 1998)

At Stages 2 to 4, the multicollinearity problem applies to the 13 indicators that were included in the measurement model. Tolerance values across the indicators ranged between .337 and .625 ruling out any serious multicollinearity problems for the analyses at Stages 2 to 4

### **Independence of observations**

The present data were collected from six groups, each group being treated by a different group of psychologists/psychiatrists. Exposure to the same therapist might constrain questionnaire responses thereby violating the independence of observations assumption and producing intra-group dependencies in the data. Intra-group dependency generally inflates the Type I error rate for any statistical test that is conducted on the data (Kashy & Kenny, 2000). The SEM techniques employed in this research assume that there are no intra-group dependencies in the data.

The magnitude of the intra-group dependency effect is reflected in the intra-class correlation (ICC). For the current research design, the formula for the ICC is:

$$ICC = (MS_{\text{between therapists}} - MS_{\text{within therapists}}) / (MS_{\text{between therapists}} + [n - 1] MS_{\text{within therapists}})$$

where  $n$ , the harmonic mean of the number of clients associated with each of the six therapists equals  $6/(1/200+1/75+1/5+1/9+1/15+1/7)$ . The mean squares in the above



formula are obtained from a one-factor ANOVA of the therapist effect. The statistical significance of the ICC - i.e., the statistical significance of the intra-group dependency effect - is reflected in the  $p$ -value for the therapist effect.

Before proceeding with the main analyses, ICC values and their significance levels were computed for each of the subscales used in the measurement model.

Table 10

*ICC Values for Each of the Indicators Used in the Measurement Model (N=311)*

Subscales	ICC
YSQ-Emotional Deprivation	.024
YSQ-Abandonment/Instability	.013
YSQ-Mistrust/Abuse	.035
YSQ-Defectiveness	-.055
YSQ-Social Isolation	.049
FMPS-Personal Standards	.042
FMPS-Concern over Mistakes	.020
FMPS-Doubts about Actions	.045
FMPS-Parental Expectations	-.033
FMPS-Parental Criticisms	-.008
PBI-Father Care	.077
PBI-Father Protection	.029
PBI-Mother Care	-.044
PBI-Mother Protection	-.017
NEO-Neuroticism	-.008

Note. a. PBI = Parental Bonding Inventory (Parker et al., 1979); b. NEO-FFI = Neuroticism Extraversion Openness to Experience Five Factor Inventory (Costa & McCrae, 1992); c. FMPS = Frost Multidimensional Perfectionism Scale (Frost et al., 1990); d. YSQ-SF = Young Schema Inventory – Short Form (Young, 1998)

Because the values depicted in Table 10 are relatively small, and because none of them are statistically significant, it was concluded that intra-group dependency would not distort the SEM analyses. Independence of observations was therefore assumed when testing the measurement and structural components of the causal model.

#### 2.2.3.4 Replacing Missing Values

For each questionnaire, the item with the greatest percentage of missing values was identified. These percentages are reported in Table 11.

Table 11

*Upper Limits on the Percentage of Item Missing Values for Each Questionnaire (N=311)*

Questionnaire	Item with most missing values
PBI mother	1.0%
PBI father	4.7%
FMPS	0.7%
YSQ-SF	1.0%
NEO	1.3%

Note. a. PBI = Parental Bonding Inventory (Parker et al., 1979); b. NEO-FFI = Neuroticism Extraversion Openness to Experience Five Factor Inventory (Costa & McCrae, 1992); c. FMPS = Frost Multidimensional Perfectionism Scale (Frost et al., 1990); d. YSQ-SF = Young Schema Inventory – Short Form (Young, 1998)

Item missing values were minimal and were therefore replaced by simple mean substitution (Tabachnick & Fidell, 2001).

#### 2.2.3.5 Power

As a rule of thumb, in order to obtain a reliable CFA solution at least five participants are required for each parameter that needs to be estimated from the data; 10 - 20 participants per parameter would be ideal (Kline, 1998). The following parameters are estimated in a CFA:

- An error variance for each item.
- A factor loading for each item.

- A variance for each factor.
- The bivariate correlations among the factors.

Applying this rule of thumb to each of the Stage 1 factor models (listed in Table 12) generates sample sizes ranging from 125 for the NEO-FFI one-factor model to 465 for the FMPS higher-order model. The present sample size of 311 is adequate for the majority of the Stage 1 CFAs. The CFA for the FMPS higher-order model, however, might be a little underpowered.

Kline's rule of thumb is also applicable to the testing the Stage 2 measurement model and the Stage 3 structural model. Assuming that the Stage 1 CFAs identify 13 indicators for the measurement model, then the following parameters need to be estimated for the Stage 2 measurement model:

- An error variance for each indicator (**10 parameters – error variances for three of the indicators will be fixed**)
- A variance for each factor (**6 parameters**)
- The bivariate correlations among the five factors (**15 parameters**)
- A factor loading for each indicator (**13 parameters**).

A minimum sample size for testing the proposed measurement model would therefore be  $5[10 + 6 + 15 + 13] = 220$ . The present sample size of 311 is therefore adequate for testing the Stage 2 measurement model.

The following parameters are estimated for the Stage 3 structural model:

- A path coefficient for each pathway (**8 parameters**).
- A disturbance for each endogenous variable (**2 parameters**).
- A variance for each exogenous variable (**4 parameters**).
- The bivariate correlation between the exogenous variables (**6 parameters**).

The terms endogenous and exogenous latent variables are defined by Byrne (2006), who stated that similar to independent variables, exogenous latent variables 'cause' changes in the values of the remaining latent variables contained in the model. Fluctuations in the values of exogenous variables are thought to be influenced by factors that are external to these

variables, such as age and gender, rather than being explained by the model. Endogenous variables are similar to dependent variables and are thus influenced, either directly or indirectly, by exogenous variables in the model. Changes in the values of endogenous variables are thought to be explained by the model as all of the latent variables that have an impact on these endogenous variables are contained in the model specification. The term disturbance refers to the “residual associated with the measurement of each observed variable” (Byrne, 2006; p.7).

A minimum sample size for testing the proposed structural model would therefore be  $5[8 + 2 + 4 + 6] = 100$ . The present sample size of 311 is therefore adequate for testing the Stage 3 structural model.

## 2.3 Results

As outlined earlier, the present SEM analysis consists of four conceptually distinct stages. The first three stages of the analysis are required to confirm the feasibility of progressing with the fourth stage. These stages are discussed below.

### 2.3.1 Stage 1: Conducting Confirmatory Factor Analyses to Determine the Dimensionality of Each Measure

A confirmatory factor analysis (CFA) was conducted on each of the five measures – PBI father, PBI mother, NEO-FFI, FMPS, and YSQ-SF – in order to determine whether the multifactor structure that has been proposed for each measure provides a better fit than a more parsimonious one-factor structure. The results of the CFAs are presented in Table 12.

Because different fit indices evaluate model fit from slightly different perspectives, more than one fit index is generally reported (Kline, 1998). The present study used the following five fit statistics: The Satorra-Bentler chi-square divided by its degrees of freedom [ $\chi^2/df$ ], the comparative fit index (CFI; Bentler, 1990; Bentler, 1995), the non-normed fit index (NNFI; Bentler, 1990; Hu & Bentler, 1999), the standardised root mean square residual (SRMR; Bentler, 1995), and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993; Steiger, 1990). The cut-off criterion for the  $\chi^2/df$  statistic has been set between two and five (Hooper, Coughlan, & Mullen, 2008). More specifically, Kline (1998) proposes that a value less than or equal to three indicates an acceptable fit. The CFI compares the null model, in which all latent variables are assumed to be uncorrelated, to the hypothesised model. The suggested criterion for a good fit is a CFI value greater than or equal to .85, and the NNFI compares the chi-square values of the null and the hypothesised model, a value

greater than or equal to .85 indicates a good fit (Benet-Martnez & Karakitapoglu-Aygun, 2003; Tabachnick & Fidell, 2007). The SRMR is considered to be one of the more meaningful fit indices to report in a CFA analysis (Hooper et al., 2008). It measures the square root difference between the residuals of the null model and the hypothesised model. An SRMR of less than or equal to .1 is required for the SRMR to be considered a good fit (Marsh, Hau, & Wen, 2004). The RMSEA is considered an important fit index as it takes into account the number of parameters in the hypothesised models and selects the most parsimonious model to analyse (Hooper et al., 2008). A value of less than or equal to .08 on this index indicates a good fit (Benet-Martnez & Karakitapoglu-Aygun, 2003; Hu & Bentler, 1999). The fit statistics for the Stage 1 CFAs are reported in Table 12.

Table 12

*Goodness-of-fit Statistics for Confirmatory Analyses of the Five Scales (N=311)*

Measure	$\chi^2$	df	$\chi^2/df^a$	CFI <sup>b</sup>	NNFI <sup>c</sup>	SRMR <sup>d</sup>	RMSEA <sup>e</sup>
PBI mother (25 items)							
1-factor	2980.541	275	10.838	.866	.854	.148	.246
2-factors: Protection, Care.	2348.961	274	8.573	.918	.910	.107	.159
PBI father (25 items)							
1-factor	2750.262	275	10.000	.835	.820	.158	.234
2-factors: Protection, Care	1923.716	274	7.021	.894	.884	.122	.142
FMPS (35 items)							
1-factor	3577.954	377	9.491	.827	.814	.144	.208
5-factors: PE, PC, PS, DA, CM	1565.930	367	4.267	.934	.927	.093	.105
2 higher order factors (PEC & Perfectionism) tapping into 5 lower order factors (PE, PC, CM, DA, PS)	1620.696	371	4.368	.932	.926	.096	.106
YSQ (25 items)							
1-factor	4522.483	275	16.445	.812	.795	.142	.267
5-factors: Defectiveness/Shame, Social Isolation/Alienation, Mistrust/Abuse,	1116.241	265	4.212	.963	.958	.068	.104

Abandonment/Instability, Emotional Deprivation							
NEO (12 items)							
1-factor	328.966	54	6.092	.914	.895	.069	.130

Note. a. Satorra-Bentler  $\chi^2$  divided by its degrees of freedom; b. Comparative Fit Index; c. Non-Normed Fit Index; d. Standardised Root Mean Square Residual; e. Root Mean Square Error of Approximation; f. PBI = Parental Bonding Inventory (Parker et al., 1979); g. NEO-FFI = Neuroticism Extraversion Openness to Experience Five Factor Inventory (Costa & McCrae, 1992); h. FMPS = Frost Multidimensional Perfectionism Scale (Frost et al., 1990); i. YSQ-SF = Young Schema Inventory – Short Form (Young, 1998)

The statistics reported in Table 12 indicate that a multidimensional factor model, whenever available, fits the data better than its more parsimonious unidimensional counterpart. This is consistent with previous research. For both the mother and the father PBI scales, the multidimensional solution consisted of a Protection and a Care factor. The following discussion applies to both the mother and the father versions of the PBI. Following Parker et al. (2008), scores on the Protection and Care subscales were used to partition participants into four categories: Affectionless Control (low care and high protection), Affectionate Constraint (high care and high protection), Optimal Parenting (high care and low protection), and Neglectful Parenting (low care and low protection). Following categorisation, it was observed that:

- (i) Half the sample were categorised into the Affectionless Control category (53.7% of participants reported that their mothers belonged to this category, and 56.9% reported that their fathers belonged to this category).
- (ii) Participants in the Affectionless Control category tended to score *above* the sample mean on ‘Disconnection & Rejection Core Schemas’ and ‘Perfectionism’, whereas participants in the other three categories tended to score *below* the means on these outcomes (see Table 13).

The first observation indicates that the most statistically powerful contrast among the PBI categories is the contrast between the Affectionless Control category and the other three categories combined - this being the contrast that not only *optimizes* group sizes, but also *balances* group sizes. Although the Affectionate Constraint, Optimal Parenting, and Neglectful Parenting groups varied in terms of their factor scores on the two outcomes, the second observation indicates a certain homogeneity among these three groups as they all scored below the mean on both outcomes; in contrast, the Affectionless Control group scored above the mean on both outcomes. For these reasons, and because the inclusion of multilevel (i.e., more than two levels) categorical exogenous variables in the current SEM model would seriously compromise statistical power, the four PBI categories were recoded as a dichotomy in which Affectionless Control was coded ‘1’ and the other three categories were coded ‘0’. Therefore, the constructs of Mother Affectionless Control and Father Affectionless Control were each measured by a dichotomous variable in which ‘1’ represented Affectionless Control and ‘0’ represented alternative parenting styles.



Table 13

*Factor Scores for Disconnection & Rejection Core Schemas and Perfectionism Across the Four PBI Categories (N = 311)*

Parental Bonding Inventory Category	Disconnection & Rejection Core Schemas		Perfectionism	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Affectionless Control (Mother; <i>n</i> = 167)	.260	.901	.227	.944
Affectionless Control (Father; <i>n</i> = 177)	.258	.899	.177	.943
Affectionate Constraint (Mother; <i>n</i> = 48)	-.276	.835	-.411	.910
Affectionate Constraint (Father; <i>n</i> = 31)	-.428	.876	-.322	1.060
Absent or Weak Bonding (Mother; <i>n</i> = 43)	-.158	.922	-.223	.983
Absent or Weak Bonding (Father; <i>n</i> = 56)	-.192	.920	-.158	1.007
Optimal Bonding (Mother; <i>n</i> = 53)	-.441	.815	-.162	1.095
Optimal Bonding (Father; <i>n</i> = 47)	-.462	.743	-.268	1.048

For the FMPS, the five-factor solution and the higher-order factor solution fit equally well. In the higher-order solution, one higher order factor (Parental Expectations and Criticism) ‘drives’ the two lower-order factors PE and PC, and a second higher-order factor (perfectionism) ‘drives’ the three lower order factors of CM, PS, and DA. Some researchers argue that Parental Expectations and Criticism is a potentially confounding aetiological factor that should be studied independently of the Perfectionism factor (e.g., Rheaume et al., 1995; Shafran et al., 2003). These factors were therefore studied as separate constructs in the current model. Parental Expectations and PC were indexed by Parental Expectations and Criticisms; and Perfectionism was indexed by CM, PS, and DA.

For the Neuroticism scale of the NEO-FFI, a one-factor solution - which was the only plausible solution in this instance – provided a good fit for the data. Neuroticism was therefore incorporated into the measurement model as the sole indicator of a Neuroticism construct. For the YSQ, the five factors of Emotional Deprivation, Abandonment, Social Isolation, Mistrust/Abuse and Defectiveness fit the data better than the more parsimonious one-factor model. It has been argued that these five factors are generated by a higher-order construct of Disconnection and Rejection Core Schemas. The five factors were therefore incorporated into the measurement model as separate indicators of a Disconnection and Rejection construct.

There were therefore six latent variables and 13 associated indicators in the final measurement model depicted in Figure 4. As the CFA solutions were consistent with the factor solutions predicted in the Hypotheses 10-13, the analyses could proceed to Stage 2 to test the measurement model.

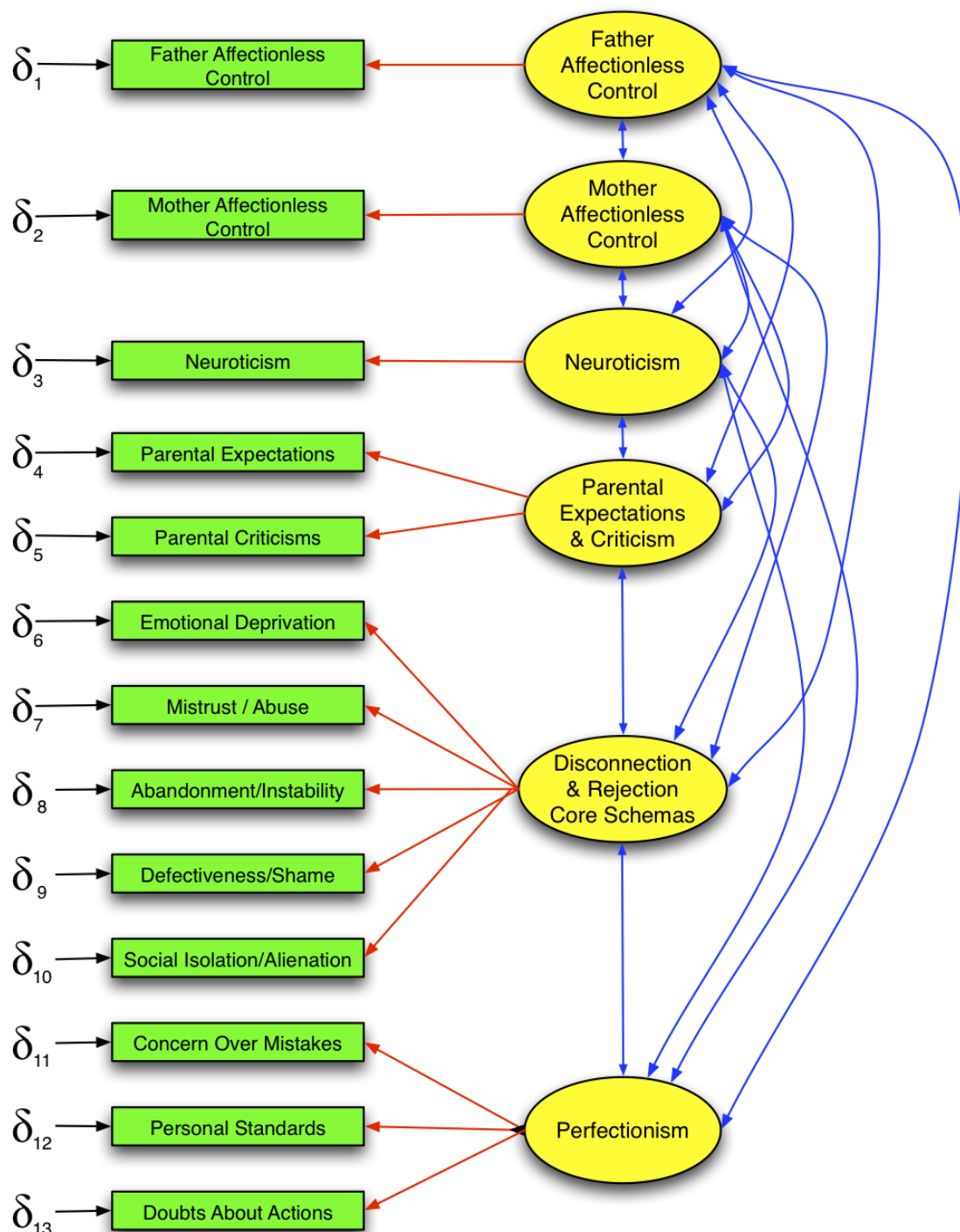


Figure 4. *The Measurement Model*

Note.  $\delta$  represents measurement error

### 2.3.2 Stage 2: Testing the Measurement Model

The factors confirmed from the Stage 1 CFAs were used as indicators in the measurement model. An important part of testing the measurement model involves estimating the measurement error inherent in using observed variables (i.e., the indicators) to measure latent variables (i.e., the psychological constructs that ‘drive’ the indicators). There must be at least two indicators per construct in order to estimate measurement error from the data. Because Neuroticism, Mother Affectionless Control, and Father Affectionless Control are all one-indicator constructs, their measurement errors could not be estimated from the data and therefore must be estimated from the reliabilities of the indicators. The error inherent in measuring the construct Neuroticism, therefore, was derived from the alpha coefficient of the NEO-FFI subscale and input to the SEM analysis. The errors inherent in measuring the categorical constructs Mother Affectionless Control and Father Affectionless Control were derived from the joint reliabilities of the Protection and Care subscales. The Protection and Care subscales have been shown to be highly reliable, and this is reflected in the alpha reliabilities computed on the present sample (Mother Care = .94, Mother Protection = .90, Father Care = .92, and Father Protection = .88). A conservative estimate of the error inherent in measuring Mother Affectionless Control can be derived from the product of the first two reliabilities; the error inherent in measuring Father Affectionless Control can be derived in a similar fashion by multiplying the latter two reliabilities (see Goodwin & Plaza, 2000).

The fit statistics for the measurement model depicted in Figure 4 are reported in Table 14. They indicate an adequate fit.

Table 14

*Goodness-of-fit Statistics for the Measurement Model (N=311)*

$\chi^2$	Df	$\chi^2/df$	CFI	NNFI	SRMR	RMSEA
202.140	53	3.814	.956	.934	.072	.095

Note. a. CFI represents comparative fit index; b. NNFI represents non-normed fit index; c. SRMR represents standardized root mean square residual; d. RMSEA represents root mean square residual

Before testing the fit of the Stage 3 structural model, construct reliability was examined for the three latent variables that had multiple indicators. Latent variables with multiple indicators should always show good construct reliability. Hair et al (1998) state that construct reliability can be conceived as the accuracy with which each indicator measures the construct. Hair et al.’s formula can be used as an index of construct reliability, which argued

that a value greater than .7 indicates good construct reliability. According to the values reported in Table 15, all three variables with multiple indicators had good construct reliability when evaluated against the .7 cutoff.

Table 15

*Construct Reliability of Latent Constructs with Multiple Indicators (N=311)*

Constructs and indicators	Construct reliability
Parental Expectations & Criticisms	.83
Disconnection & Rejection	.84
Perfectionism	.78

### 2.3.3 Stage 3: Testing the Structural Model

Confirmation of the measurement model is an important step in SEM process. If the measurement model does *not* fit the data, it must be concluded that the latent variables are being measured inappropriately – which means that there is no point in testing the structural model; the analysis stops and it is concluded that the structural model is not viable (Long, 1983). If the measurement model *does* fit the data, as it did here, then the next procedure is to test the structural model. Testing the structural model involves testing the viability of its causal pathways. In the process of testing the measurement model, *factor scores* become available for each of the latent variables in the structural model. These scores are generally referred to as *latent factor scores*. Each of the 311 participants will have six latent factor scores – one for each of the six latent variables. Testing the structural model involves determining whether its causal pathways can adequately account for the correlations among the latent factor scores.

The fit statistics reported in Table 16, which were once again evaluated against the cut-off values used previously, indicate that the fit of the structural model was adequate.

Interestingly, the fit statistics mirror those reported in Table 14 for the measurement model. This result is to be expected because the nine-pathway structural model is a saturated model, which means that it is a recursive model containing all possible pathways, and will therefore provide a perfect fit for the data. The less than perfect fit reported in Table 16 is therefore entirely attributable to the embedded measurement model.

Table 16

*Goodness-of-fit Statistics for the Structural Model (N=311.)*

$\chi^2$	<i>df</i>	$\chi^2/df$	CFI	NNFI	SRMR	RMSEA
202.140	53	3.814	.955	.934	.072	.095

Note. a. CFI represents comparative fit index; b. NNFI represents non-normed fit index; c. SRMR represents standardized root mean square residual; d. RMSEA represents root mean square residual

The path coefficients for each of the pathways in the structural model, and their significance, are presented in Table 17.

Table 17

*Path Coefficients for the Nine-Pathway Structural Model (N=311.)*

Pathway	Path Coefficient (Standard Error)	z-value	p-value
Father Affectionless Control → Disconnection & Rejection Core Schemas	.211 (.078)	2.717	.007**
Mother Affectionless Control → Disconnection & Rejection Core Schemas	.149 (.073)	2.051	.040*
Parental Expectations & Criticism → Disconnection & Rejection Core Schemas	-.062 (.072)	-0.858	.391
Neuroticism → Disconnection & Rejection Core Schemas	.621 (.088)	7.019	.000***
Disconnection & Rejection → Perfectionism	.232 (.095)	2.447	.014*
Father Affectionless Control → Perfectionism	-.143 (.075)	-1.907	.057
Mother Affectionless Control → Perfectionism	.090 (.069)	1.305	.192
Parental Expectations & Criticism → Perfectionism	.239 (.075)	3.207	.001**
Neuroticism → Perfectionism	.359 (.094)	3.824	.000***

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\*  $p < .01$

Three of the pathways in the saturated nine-pathway model were non-significant. In determining the model of best-fit using structural equation modeling, non-significant pathways are candidates for deletion (Long, 1983). For this reason, and because of the lack of empirical evidence for the existence of these pathways, the three non-significant pathways were dropped from the model. The implications of dropping these pathways are discussed next.

On the basis of previous research (e.g. Beck, 1979; Beck, 1995; Young, 1999), it was predicted in Hypothesis 9 that Parental Expectations and Criticism would have an indirect impact on Perfectionism via Disconnection and Rejection Core Schemas. However, the non-significant pathway from Parental Expectations and Criticism to Disconnection and Rejection Core Schemas offers no support for this prediction.

Whilst there is empirical support for a relationship between Affectionless Control and perfectionism (e.g. Enns et al., 2000; Stoeber, 1998), the nature of this relationship - direct or indirect through mediating factors - has not previously been examined. The finding in the current study that Mother and Father Affectionless Control did not have a direct impact on Perfectionism, therefore hypotheses one and two were not supported. However, the findings in the present study that both Mother and Father Affectionless Control had an *indirect* impact on perfectionism via Disconnection and Rejection Core Schemas supports Hypotheses six and seven.

#### **2.3.4 Stage 4: Comparing the nine-pathway and the six-pathway structural models**

The fit of the more parsimonious six-pathway model was tested and compared to the fit of the nine-pathway model. Table 18 reports the fit statistics for the two models.

Table 18

*Goodness-of-fit Statistics for the six- and nine-Pathway Versions of the Structural Model (N=311)*

Model	$\chi^2$	df	$\chi^2/df$	CFI	NNFI	SRMR	RMSEA
9-pathways	202.140	53	3.814	.956	.935	.072	.095
6-pathways	209.090	56	3.734	.951	.931	.073	.097

Note. a. CFI represents comparative fit index; b. NNFI represents non-normed fit index; c. SRMR represents standardized root mean square residual; d. RMSEA represents root mean square residual

Both models fit the data reasonably well. The chi-square difference test was conducted in order to determine whether the fit of the more parsimonious six-pathway model was as good as the nine-pathway model. The test was non-significant indicating that the nine- and six-pathway model fit the data equally well ( $\chi^2_{\text{diff}}(3) = 6.95, p = .074$ ). The more parsimonious six-pathway model is therefore the preferred model. The path coefficients for the six-pathway model are reported in Table 19.

Table 19

*Path Coefficients for the Six-Pathway Structural Model (N=311.)*

Pathway	Path Coefficient (Standard Error)	z-value	p-value
Father Affectionless Control → Disconnection & Rejection Core Schemas	.164 (.069)	2.370	.018*
Mother Affectionless Control → Disconnection & Rejection Core Schemas	.599 (.084)	7.161	.000***
Neuroticism → Disconnection & Rejection Core Schemas	.203 (.073)	2.794	.005**
Disconnection & Rejection Core Schemas → Perfectionism	.523 (.094)	5.572	.000***
Parental Expectation & Criticism → Perfectionism	.360 (.078)	4.616	.000***
Neuroticism → Perfectionism	.180 (.077)	2.325	.020*

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

The measurement and structural components for the six-pathway model are depicted in Figure 5. This diagram represents the final aetiological model of perfectionism and provides a representation of the direct and indirect relationships between each of the variables and perfectionism.

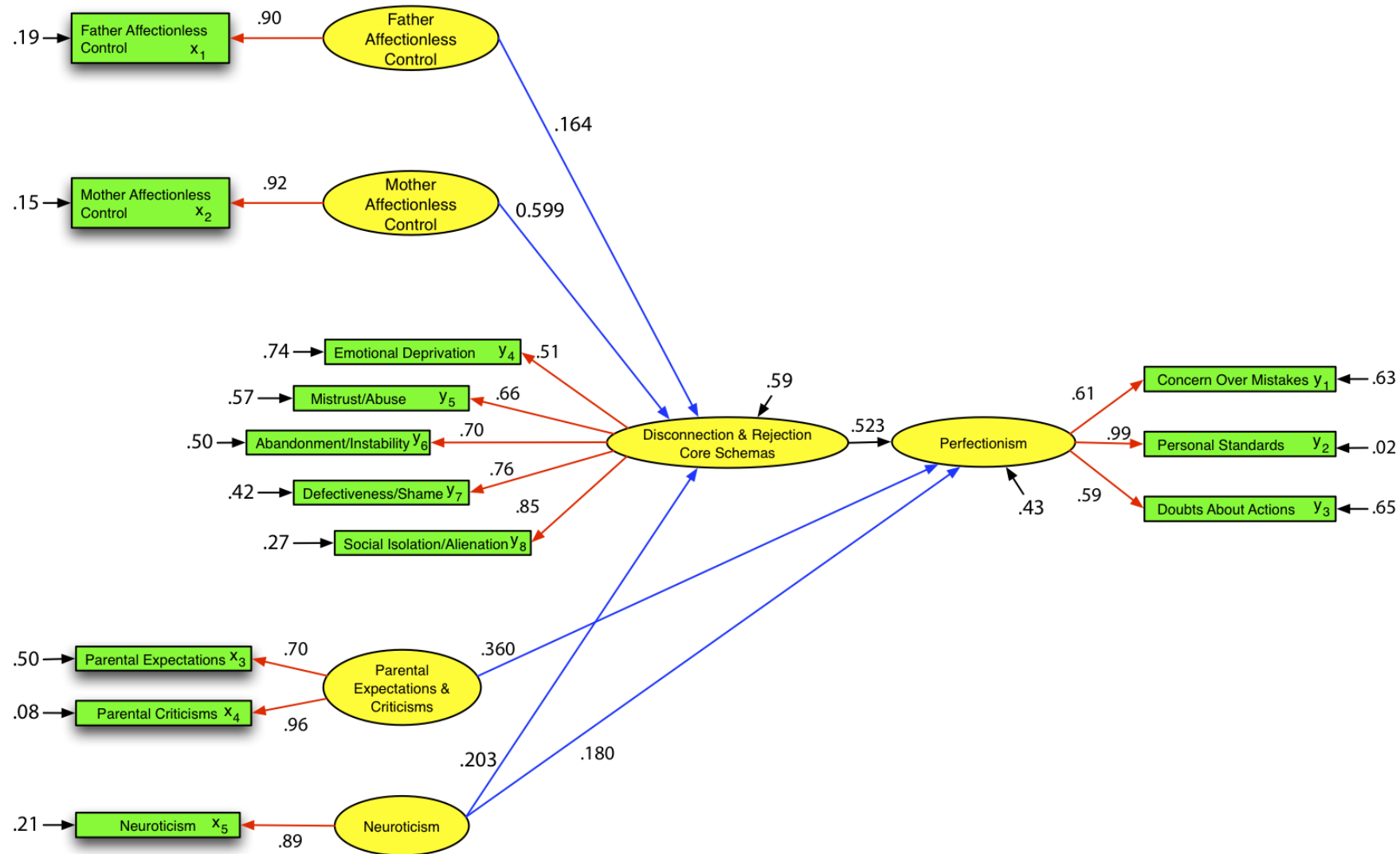


Figure 5. The measurement and structural components of the final six-pathway model

Note. a. green rectangles depict observed measures; b. yellow ovals depict latent constructs; c. red arrows depict factor loadings; d. blue arrows depict causal pathways; e. black arrows depict measurement error



The six-pathway model can be used to explain the correlations among the latent variables reported in Table 20. The relationship between Father Affectionless Control and Perfectionism ( $r(309) = .293, p = <.001$ ) and the relationship between Mother Affectionless Control and Perfectionism ( $r(309) = .374, p = <.001$ ) are both mediated by Disconnection and Rejection. In other words, neither Father Affectionless Control nor Mother Affectionless Control has a direct impact on Perfectionism; rather they have an indirect impact on Perfectionism via Disconnection and Rejection. Figure 5 provides support for Hypotheses 6 and 7, which predicted significant negative path coefficients between Father and Mother Affectionless Control and Disconnection and Rejection Core Schemas, as well as a significant positive path coefficient between Disconnection and Rejection Core Schemas and Perfectionism. However, as depicted in Table 17, the path coefficients between Mother and Father Affectionless Control and Perfectionism were not significant as was predicted in Hypotheses 1 and 2 respectively. Furthermore, as is evident in Figure 5, the relationship between Neuroticism and Perfectionism ( $r(309) = 0.608, p = <.001$ ) arises from Neuroticism having both a direct impact and an indirect impact (via Disconnection and Rejection Core Schemas) on Perfectionism. These relationships were predicted in Hypotheses 3 and 8.

Interestingly, the six-pathway model suggested that the relationship between Parental Expectations and Criticism and perfectionism ( $r(309) = .460, p = <.001$ ) was *not* mediated by Disconnection and Rejection Core Schemas. In other words, Parental Expectations and Criticism has a direct impact on perfectionism; it does not have an indirect impact on perfectionism via Disconnection and Rejection Core Schemas. This provides support for Hypothesis 4 but not for Hypothesis 9, which predicted a direct and indirect relationship with Perfectionism respectively.

Finally, Figure 5 indicates that the relationship between Disconnection and Rejection Core Schemas and Perfectionism ( $r(309) = .561, p = <.001$ ) reflects the direct impact of Disconnection and Rejection on Perfectionism (as predicted by Hypothesis 5) as well as the impact of each of the four exogenous variables on both Disconnection and Rejection Core Schemas and Perfectionism.

Table 20

*Correlation Matrix of Latent Variables (N=311)*

	DRCS	Perfectionism	MAC	FAC	Neuroticism	PEC
DRCS	1.000					
Perfectionism	.561	1.000				
MAC	.438	.374	1.000			
FAC	.485	.293	.548	1.000		
Neuroticism	.722	.608	.339	.370	1.000	
PEC	.420	.460	.584	.595	.434	1.000

*Note.*  $p < .001$  for all correlations; MAC = *Mother Affectionless Control* and FAC = *Father Affectionless Control of the Parental Bonding Inventory* (Parker et al., 1979); PEC = *Parental Expectations and Criticisms of the Frost Multidimensional Perfectionism Scale* (Frost et al., 1990); DRCS = *Disconnection & Rejection Core Schemas of the Young Schema Questionnaire – Short Form* (Young, 1998); Neuroticism scale of the *Neuroticism Extraversion Openness to Experience Five Factor Inventory* (Costa & McCrae, 1992).

All of the correlations between the variables reached significance ( $p = <.001$ ). Therefore support is provided for Hypotheses 14-17, in which it was predicted that there would be significant correlations among all variables. The direction of the correlations observed were all consistent with the predictions outlined in the hypotheses.

## 2.4 Discussion

The primary aim of this study was to identify the salient aetiological factors of perfectionism in the literature in order to propose an aetiological model and directly test the proposed aetiological model of perfectionism in a sample of clients in treatment for psychological disorders and problems. As the aims in the central study explore many different areas in the perfectionism literature, these will be considered in turn in this chapter. The overall construct of perfectionism will be discussed first, followed by a discussion on each of the salient aetiological factors included in the aetiological model: parenting factors, personality factors and cognitive factors. This will be followed by a discussion on aetiological models of perfectionism. Suggestions for future research will be noted in each relevant section. Finally, limitations in the research will be considered.

### 2.4.1 Perfectionism as a Multidimensional Construct

The results support the existing current consensus in the literature that considers perfectionism to be best measured as a multidimensional construct. When examining the factor structure of the FMPS (Frost et al., 1990), five lower-order factors were found that confirmed the factor structure of the measure. It is noted that the subscale of Organisation was not directly examined, as this subscale is not included in the overall perfectionism score and was not of relevance to the current study. These findings are consistent with previous studies that have also confirmed the original factor structure of the FMPS (e.g., Frost et al., 1990; Parker & Atkins, 1995; Parker & Stumpf, 1995).

It was also found that two higher-order factors tapped into the five lower-order factors. These findings are consistent with research conducted by Stoeber (1998) and Purdon et al. (1999) who found that one of the higher order factors on the FMPS (Frost et al., 1990) was that of Parental Expectations and Criticism, comprised of the two parenting subscales of the FMPS. However, the present results are only partially consistent with Stoeber's and Purdon et al.'s other findings that the remaining FMPS scales tapped into two higher-order factors of Concern over Mistakes and Doubts, and Personal Standards. That is, the present research found that three FMPS subscales of CM, DA and PS formed only one higher-order factor that was termed Perfectionism. The present findings suggest that whilst the subscales of the FMPS do represent different concepts associated with perfectionism, the parenting subscales need to be considered separately from the remaining perfectionism subscales. This finding is in line with Shafran et al. (2003) and Rheume et al. (1995) who argue that the subscales of PC and PE are possible confounding aetiological factors to the development of perfectionism, and should be considered separately from the construct of perfectionism, which is better represented by PS, CM and DA.

This study also provided further evidence that the FMPS subscales had good construct reliability, when re-examining the two higher factors of Parental Expectations and Criticism ( $r = .83$ ) and Perfectionism ( $r = .78$ ). These findings are consistent with studies by Frost et al. (1993) and the review conducted by Enns and Cox (2002).

The findings in the present study, which recruited individuals engaging in psychological/psychiatric treatment, are also consistent with the large body of existing research that has identified that the FMPS (Frost et al., 1990) is associated with a range of psychological disorders that have been examined separately in clinical and non-clinical samples. For example, research has found the FMPS to be correlated with obsessive-compulsive symptoms (e.g., Chik et al., 2008); depressive symptoms (e.g., Beck et al., 2004); social anxiety (e.g., Rosser et al., 2003) and eating disorders (e.g., Bardone-Cone et al., 2007). The present

research used a large sample of clients attending therapy with clinical psychologists/psychiatrists for a wide range of psychological disorders and issues. Therefore, the findings from the present study may be consistent with suggestions by various authors who contend that perfectionism is a common factor that is present across several psychological disorders and problems (e.g. Shafran & Mansell, 2001). These findings are also consistent with Egan et al.'s (in press) view that perfectionism is a “transdiagnostic” process that occurs across psychological diagnoses and issues. However, any conclusions from the present research that the FMPS is associated with a wide range of psychological disorders and issues must be made cautiously as due to the necessary anonymity of the clients participating in the study, the presenting issues and diagnoses of clients could not be determined. This limitation of the research will be discussed in more depth later in this chapter.

#### **2.4.2 Parenting Aetiological Factors**

The prediction that the Parental Bonding Inventory (PBI; Parker et al., 1984) would have a two-factor solution was confirmed. This finding is consistent with other factor analytic studies of the PBI that have identified a two-factor structure of Care and Protection scales in Parker et al.'s (1979) original study, a clinical sample of out-patients diagnosed with schizophrenia (Kazarian et al., 1987) and in a Dutch clinical sample (Arrindell et al., 1989). The present finding did not support some previous findings of a three-factor solution on the PBI with factors of Care, Protection and Authoritarianism (e.g., Cox et al., 2000; Kendler, 1996). The present findings of support for the original two-factor solution may be due to the fact that the original 25-item PBI was examined, whereas the findings of a three-factor solution has been identified in shortened versions of the PBI using a 16-item version (e.g., Kendler et al., 1996) and an eight-item version (e.g., Cox et al., 2000).

The findings of a two-factor solution for the PBI (Parker et al., 1984) allowed the factors of Care and Protection to be classified into the commonly used sub-group: Affectionless Control, which is comprised of scores of low Care and high Protection (e.g., Parker et al., 2008). It was predicted that Affectionless Control would have a direct relationship with Perfectionism, as strong correlations had been consistently observed between these factors in previous research (e.g., Enns et al., 2000; Stoeber, 1998). However, the path coefficient between Mother and Father Affectionless Control and perfectionism did not reach significance ( $p = .192$  and  $.057$  respectively). More specifically, it was found that although there was no direct relationship between Affectionless Control and Perfectionism, an ‘indirect’ relationship between Mother and Father Affectionless Control and Perfectionism that was mediated by Disconnection and Rejection Core Schemas was found to be significant. Therefore, the present research confirmed a relationship between Affectionless

Control and Perfectionism, however, Disconnection and Rejection Core Schemas in fact mediated this relationship. This finding is interesting as it represents an extension of previous literature that has only investigated the direct association between Affectionless Control and Perfectionism. The present research demonstrates the importance of taking into account extraneous variables, such as core schemas, that may mediate the relationship being examined, before conclusions can be reached.

The mediating role of core schemas between Affectionless Control and Perfectionism is consistent with theoretical models (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999). However, the previous research that has examined Affectionless Control used correlational designs that did not account for or control extraneous variables. Therefore, these previous findings of a correlation between Affectionless Control and Perfectionism may have indeed been mediated by an extraneous variable, if this was examined. The present research therefore represents the first study, to the author's knowledge, that has examined whether core schemas mediate the relationship between Affectionless Control and Perfectionism, and this prevents a direct comparison to previous research. Clearly further research is needed to replicate this finding and further examine the mediating role of core schemas between Affectionless Control and Perfectionism. The finding also highlights the importance of examining potential mediating roles of extraneous variables using statistical techniques that allow for direct and indirect relationships between variables to be examined in other psychological disorders and constructs.

In addition to exploring Affectionless Control, Parental Expectations and Criticism were also examined in the proposed aetiological model. It was predicted that the Parental Expectations and Criticisms factor, derived from a higher-order factor solution evident in the FMPS (Frost et al., 1990), would have a direct and an indirect relationship with Perfectionism. The finding that Parental Expectations and Criticisms had a significant direct relationship with Perfectionism is consistent with earlier research that has found an association between Parental Expectations and Criticism and perfectionism (e.g., Bandura & Dweck, 1999; Chang, 2000; Neumeister, 2004a). The finding of a direct relationship between Parental Expectations and Criticisms and Perfectionism also provides some further indirect support for the aetiological model of perfectionism proposed by Flett et al. (2003) who proposed that Parental Expectations and Criticisms was an important aetiological factor in perfectionism. The finding of a direct relationship between Parental Expectations and Criticisms and Perfectionism is perhaps not surprising given that the subscales representing these factors were taken from the FMPS (Frost et al., 1990). Therefore, further research is required to replicate this finding using separate measures of perfectionism and Parental Expectations and Criticisms.

Interestingly the prediction based on theoretical models (e.g., J. Beck, 1995; Young, 1999), which asserts that the relationship between Parental Expectations and Criticisms and Perfectionism would be mediated by Disconnection and Rejection Core Schemas was not supported. It is of note that this indirect relationship was in the expected trend direction and approached significance. Direct comparisons with previous research are prevented as this was the first study to investigate the mediating relationship of core schemas between Parenting Expectations and Criticisms and Perfectionism.

The present finding that there are different relationships between the two aetiological parenting factors and Perfectionism is intriguing. That is, there is a direct, but not an indirect relationship, between Parental Expectations and Criticisms and Perfectionism. In contrast, there is only an indirect relationship between Affectionless Control and Perfectionism that is mediated by Disconnection and Rejection Core Schemas. One hypothesis for this difference in aetiological parenting factors may be that as Parental Expectations and Criticisms are explicit verbal comments, this may link directly to the development of perfectionism. That is to say, receiving an explicit criticism or statement from one's parents that a child is expected to be perfect makes clear the expected performance or behaviour with no additional requirement for interpretation by the child. For example, hearing a high parental expectation or criticism such as "I expect nothing less than straight A's", may be sufficiently explicit to contribute directly to the development of perfectionism. Following on from this, as Affectionless Control is not explicit or verbal, and rather represents the more implicit experience of parental bonding, a person may need to develop an internal meaning or belief to their experience of Affectionless Control. For example, experiencing low levels of care and protection from parents may cause a person to draw inferences about what this means about their self-concept "e.g., maybe if I get straight A's, then I will get the love from my parents I have always desired". That is to say, the more implicit experience of parental bonding may require the additional development of core schemas to contribute to the development of perfectionism. In contrast, the more explicit verbal process of parental expectations and criticism may not require the development of corresponding beliefs to be as strong, and therefore is able to directly lead to the development of perfectionism. This hypothesis is consistent with several theoretical accounts that core beliefs develop as a way of making sense of our own thoughts, feelings and behaviours in response to our interactions with others (e.g., J. Beck, 1995; McWilliams, 2004; Young, 1999). Research is required to investigate this possibility. This would be difficult to do using correlational designs and would require the use of a longitudinal design to assess parenting factors and core schema development throughout childhood. Before undertaking a longitudinal study of this magnitude it would be of use to conduct qualitative interviews with adults and children regarding how they interpreted their parental expectations and criticisms and parental

bonding to contribute to the development of core beliefs and perfectionism. Although a qualitative study would not allow conclusions regarding causality to be drawn, the resulting themes could inform factors to investigate in longitudinal research.

### **2.4.3 Aetiological Personality Factors**

It was predicted that the personality factor of Neuroticism would have both a direct and indirect relationship with Perfectionism mediated by Disconnection and Rejection Core Schemas. The results were consistent with this hypothesis and contribute to the wealth of data that shows a strong relationship between Neuroticism and perfectionism (e.g., Hewitt et al., 1991; Magnusson et al., 1996). The present findings are also consistent with the contentions of early theorists that high levels of Neuroticism contributed to the development of perfectionism (e.g., Burns, 1980; Freud, 1965; Pacht, 1984).

The CFA on the Neuroticism scale of the NEO-FFI (Costa & McCrae, 1992) adds to the consistent finding that the items comprising the Neuroticism scale do indeed load onto one factor (e.g., Holden, 1992; Roland et al., 1998). The present findings that Neuroticism is associated with the maladaptive scales of perfectionism measured by the FMPS (Frost et al., 1990) are also consistent with the previous research (Dunkley et al., 1997; 2004; 2006; Hill et al., 1997; Rice et al., 2007; Stumpf & Parker, 2000; Zuroff, 1994). All of the previous studies that have found an association between Neuroticism and perfectionism have used correlational designs preventing conclusions regarding the role of Neuroticism as an aetiological factor. The present study is the first to the author's knowledge to examine Neuroticism as an aetiological factor in perfectionism using structural equation modeling. Therefore, the results have extended the literature on Neuroticism and perfectionism by not only noting a strong association, but by providing evidence that Neuroticism is an aetiological factor associated with the development of perfectionism.

The present study is also the first to the author's knowledge to investigate whether core schemas mediate the relationship between Neuroticism and perfectionism. The findings of such an interaction between these aetiological factors lend support to many prominent cognitive theories that have suggested a combination of personality and parenting factors interact to form cognitive schemas that can in turn lead to specific psychological vulnerabilities such as perfectionism (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999). Therefore, it is important for further research to replicate these findings as well as exploring the possibility of other core schemas or extraneous variables that may also mediate this relationship. The Disconnection and Rejection Core Schemas were chosen in the present research as they represented the schema domain that made the most intuitive sense to include,

and were most consistent with the beliefs discussed in previous cognitive theories. However, as no previous research had investigated the mediating role of core schemas and perfectionism, it is important for future research to investigate the role of other schema domains and especially core beliefs measured by a variety of questionnaires.

#### **2.4.4 Aetiological Cognitive Factors**

An important aim of the present study was to examine if core schemas play a mediating role in the relationship between parenting and personality factors, and perfectionism. No previous empirical research had examined this relationship, therefore on the basis of prominent cognitive theories (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999), it was predicted that Disconnection and Rejection Core Schemas would mediate the relationship between Affectionless Control, Parental Expectations and Criticisms, and Neuroticism and the subsequent development of Perfectionism. As discussed, it was found that Disconnection and Rejection Core Schemas mediated the relationships between Affectionless Control and Neuroticism and subsequent Perfectionism. However, it was also found that Disconnection and Rejection Core Schemas did not play the same mediating role in the relationship between Parental Expectations and Criticism, and Perfectionism.

The present finding that Disconnection and Rejection Core Schemas are associated with Perfectionism are consistent with the extensive body of research that has identified cognitive factors to be associated with perfectionism (e.g., Antony & Swinson, 1998; Brown et al., 1999; Frost & DiBartolo, 2002). The research is also consistent with the few studies, using correlational designs, which have consistently found a relationship between perfectionism and irrational beliefs (DiBartolo et al., 2004; Flett et al., 1991; 2008; Waller et al., 2002). In particular the present findings are consistent with the study by Waller et al. (2002) who found that the YSQ-SF (Young, 1998) core schemas including Abandonment/Instability, Mistrust/Abuse, and Social Isolation/Alienation were associated with perfectionism as measured by the EDI-2 (Garner, 1991). The CFA conducted in the present study also provided evidence that the five YSQ-SF subscales of Emotional Deprivation, Abandonment/Instability, Mistrust/Abuse, Social Isolation/Alienation and Defectiveness/Shame were all identified as individual factors that tapped in a higher-order factor named Disconnection and Rejection Core Schemas. This is consistent with the original higher-order schema groupings suggested by Young (1999). However, as the remainder of the YSQ-SF subscales were not of relevance to this study, they were not included in the factor analysis, therefore preventing a comparison to previous factor analytic studies of the YSQ-SF (e.g., Cecero et al., 2005).



The only previous two studies to use a mediational analysis to examine the role of schemas yielded inconsistent findings. DiBartolo et al. (2008) found that core beliefs of self-worth/self-concealment mediated the relationship between perfectionism and psychopathology. In contrast, Park et al. (2010) found that self-esteem did not mediate the relationship between perfectionism and distress. However, Park and colleagues did find a significant pathway that suggested that perfectionists engaged in maladaptive coping styles, which in turn led to low self-esteem and distress. Therefore, it appeared that maladaptive coping styles were the key factor in the relationship between perfectionism and psychological distress, which is consistent with Shafran et al.'s (2002, 2010) model of maintaining mechanisms of perfectionism. DiBartolo et al. and Park et al. did not aim to examine the mediating role of cognitive schemas in the aetiological development of perfectionism and therefore their results cannot be directly compared with the present findings. Thus, further research needs to examine the mediating role of core schemas as both an aetiological and maintaining factor in perfectionism.

Despite the frequent theoretical models that propose that core schemas underlie the development of anxiety and emotional disorders (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999), no studies have examined core schemas as an aetiological factor in the development of perfectionism. Furthermore, no previous research has studied the possible mediating role of core schemas in the development of perfectionism. Therefore, this study provides important empirical findings that support A. Beck's (1979) model of generalised anxiety that suggested that early life experiences including parenting interact with 'wired-in' factors such as personality and lead to the development of a set of core schemas. On the basis of these schemas, Aaron Beck (1979) theorised that individuals go on to develop intermediate beliefs that strengthen the core schemas and maintain psychological difficulties. If viewed in line with Aaron Beck's model, the findings of this study suggest that Affectionless Control interacts with Neuroticism (and temperament) to form a set of core schemas relating to Disconnection and Rejection. Individuals then develop the intermediate belief/coping strategy of perfectionism that perpetuates the schemas and maintains emotional and anxiety difficulties.

The present findings also support Judith Beck's (1995) extension of Aaron Beck's (1979) model. J. Beck asserted that both core beliefs and intermediate beliefs combined to predict a person's automatic thoughts. She argued that core beliefs could be divided into Unlovability and Helplessness categories and included core beliefs pertaining to being unworthy, unwanted, undesirable, defective and incompetent. She proposed that intermediate beliefs served a contingent function to these core beliefs. The core beliefs identified in Judith Beck's (1995) theory are conceptually similar to the Disconnection and Rejection Core Schemas in

the present study of Emotional Deprivation, Abandonment/Instability, Mistrust/Abuse, Social Isolation/Alienation and Defectiveness/Shame. If the present findings are viewed in line with Judith Beck's (1995) theory, the findings suggest that Disconnection and Rejection Core Schemas develop as a result of personality and parenting factors, and subsequently perfectionism develops as an intermediate belief that serves as a contingent function that strengthens the core schemas, an example of which is "I have to be perfect for my parents to love me".

Finally the findings are also consistent with the theory of early maladaptive schemas proposed by Young (1999). Young asserted that as a result of early life experiences including parenting and personality, a set of core schemas develop followed by the development of compensatory schemas. Young argued that Unrelenting Standards, which is conceptually similar to perfectionism, develops as a compensatory belief for underlying Disconnection and Rejection Core Schemas. Overall, it can be seen that the present findings support the theories of Aaron Beck (1979), Judith Beck (1995) and Young, when viewed in the context of the perfectionism literature.

Recently, Young has expanded the YSQ-SF (Young, 1998) to include the measurement of three schema domains, which were previously defined by Young et al. (2003). Approval-Seeking/Recognition Seeking, is defined as having "excessive emphasis on gaining approval, recognition, or attention from other people or fitting in at the expense of developing a secure and true sense of self" (p.16); Negativity/Pessimism' is defined as "a pervasive lifelong focus on the negative aspects of life (pain, death, loss...), while minimizing or neglecting the positive or optimistic aspects" (p.17), and 'Punitiveness' is defined as "the belief that people should be harshly punished for making mistakes" (p.17). The latest version of the YSQ-SF was developed after data collection had commenced in the present study and thus could not have been included in the measures. However, it is important for further research to examine the relationships between these new schemas and perfectionism. For example, Punitiveness could be an important aetiological factor in the development of perfectionism, as perfectionism could develop as a way of trying to avoid making mistakes and perceived associated punishment. Similarly, perfectionism could develop as a way of 'approval seeking'. Further research is therefore needed to investigate these potential causal relationships. This could be achieved through a further study using structural equation modeling that uses the latest version of the YSQ-SF and directly investigates the relationship between perfectionism and the new schema domains.

### **2.4.5 Aetiological Models of Perfectionism**

The central aim of the research was to identify salient aetiological factors of perfectionism in the literature to propose an aetiological model of perfectionism that could be empirically tested in a mixed clinical population. It was initially proposed that the factors of Mother and Father Affectionless Control, Neuroticism and Parental Expectations and Criticism would result in both a direct relationship with Perfectionism and would also interact to result in the development of Disconnection and Rejection Core Schemas that would subsequently lead to the development of Perfectionism. Based on previous theoretical (e.g., Barlow, 1992) and empirical (e.g., Tozzi et al., 2004) research an underlying genetic component was assumed but not directly tested as it was beyond the scope of this research. The present findings provided evidence that there is a direct link between Neuroticism and Perfectionism, and between Parental Expectations and Criticism and Perfectionism. Further evidence was provided for an indirect relationship between Father and Mother Affectionless Control and Perfectionism, and between Neuroticism and Perfectionism, that were mediated by Disconnection and Rejection Core Schemas. As no direct relationship was identified between Affectionless Control and Perfectionism, and the relationship between Parental Expectations and Criticisms and Perfectionism was not found to be significantly mediated by core schemas, these paths were excluded from the model. The resulting aetiological model is depicted below.

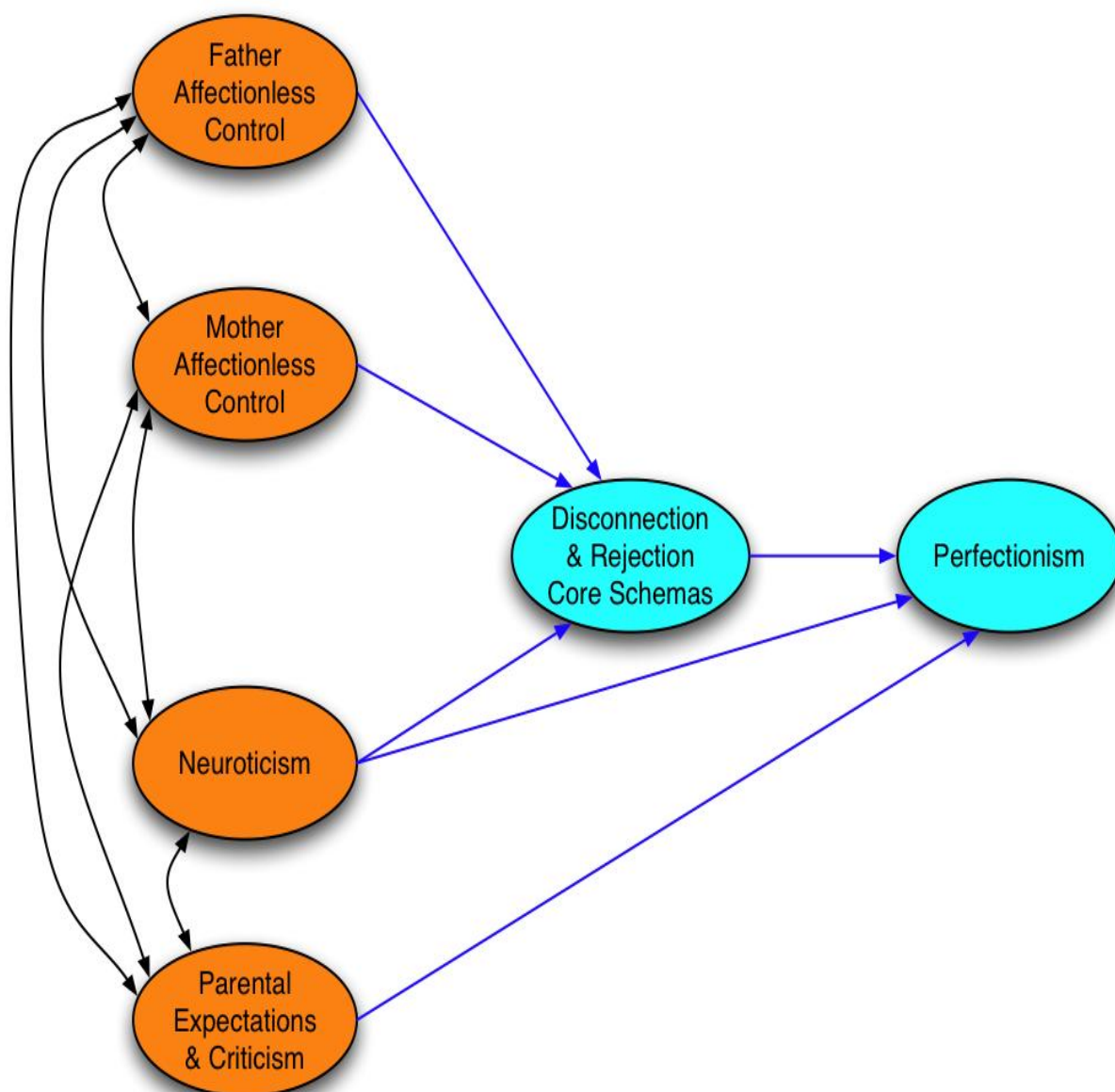


Figure 6. *Aetiological model of perfectionism*

No previous research has empirically tested an aetiological model of perfectionism and therefore the present results cannot be directly compared to earlier findings. However, the present findings will be discussed in relation to the three models of perfectionism that have been theorised.

Shafran and colleagues (2002; 2010) proposed a cognitive behavioural model of maintaining factors of perfectionism. To date, all aspects of this model have not been simultaneously tested in an empirical study, despite the increasing number of studies that have found indirect support for single aspects of the model. The focus of Shafran and colleague's (2002; 2010) model is on the role of cognitive and behavioural maintaining factors as opposed to aetiological factors in the present model. Whilst the models cannot be directly compared,

they may be viewed as complementary. The present model informs the aetiological factors to assess and address in psychological assessment, case formulation and treatment, while Shafran and colleague's (2002; 2010) model describes the maintaining factors of perfectionism (once established) and can be used to inform the precipitating factors of perfectionism to identify and incorporate into cognitive behavioural treatments.

Shafran et al.'s (2002; 2010) model has been criticised for not including many factors in the model that could lead to long lasting change (e.g., Glover et al., 2007; Hewitt et al., 2003). These authors have hypothesised that if predisposing factors of perfectionism were included in the model then treatments derived from the model would result in longer-term change. If Shafran et al.'s (2002; 2010) model and the aetiological model in the present research are used in combination to inform the construct of perfectionism, these criticisms may be diminished if treatments based on a combination of these models are found to lead to improved long term treatment outcome. Therefore, an interesting area of research would be to test both the present aetiological model and Shafran et al.'s (2002; 2010) maintaining model in a large-scale clinical sample. This could enhance knowledge of the construct of perfectionism by examining both the aetiological and maintaining factors.

As with Shafran et al.'s (2002, 2010) model, Slade and Owen's (1998) dual process model of positive and negative perfectionism has not been directly tested. This model focused primarily on maintaining factors to perfectionism, which were not examined in the present research. However, it was also theorised that parental modeling and reinforcement were the aetiological factors that contributed to the development of perfectionism, however, parental modeling and reinforcement were not directly tested as the present model included the more salient factors of Affectionless Control and Parental Expectations and Criticisms identified in the literature. Although the maladaptive form of perfectionism was examined in the present research as it was of most clinical relevance, investigating the aetiological factors that lead to the develop of both positive and negative perfectionism would be very useful in non-clinical populations, such as athlete and student populations, and would be a worthy area of future research.

Flett and colleagues (2002) have proposed the only aetiological model of perfectionism, however this model has not been empirically tested. The current research provided partial support for Flett et al.'s theoretical model with the present findings that Parental Expectations and Criticisms were directly related to Perfectionism. Furthermore, Flett et al.'s model theorised that a childhood temperament characterised by high levels of emotionality is an aetiological factor in the development of perfectionism. The present findings of a relationship between Neuroticism and Perfectionism are partially consistent with this suggestion. While,

Flett et al. did not specifically mention the personality variable of Neuroticism in their model, high levels of Neuroticism have been defined as being insecure and anxious (Antony & Swinson, 1998), which has conceptual similarities to high levels of emotionality.

In addition to the aetiological factors proposed by Flett et al. (2002), the present model of perfectionism also examined aetiological factors that had been identified to be salient in the literature, including Affectionless Control and core schemas. In contrast to the present model, Flett et al. did not propose how the aetiological factors in their model interacted. Therefore, it would be important for future research to compare the present model with Flett et al.'s model in a clinical population. Further research is also needed to examine the mediating relationships between the aetiological factors proposed in Flett et al.'s model.

#### **2.4.6 Limitations**

The current investigation has revealed some promising results regarding the investigation of aetiological models of perfectionism. The unique contribution to the literature was the development of an aetiological model of perfectionism that was empirically tested in a clinical sample. Furthermore, this study was able to overcome some of the methodological problems in past research that has primarily used correlational designs to investigate factors associated with the development of perfectionism, from which directionality could not be concluded. The study used structural equation modeling to allow inferences regarding directionality in an aetiological model to be made. However, this investigation had some shortcomings. The main problem encountered in this research was that the anonymous use of questionnaires, which was ethically required in a clinical sample derived from a large range of private practices, prevented collecting data from the client's treating clinician regarding their psychological diagnoses. If clinicians had been asked to directly approach their clients and ask them to participate in the study, diagnostic information could have been obtained, but this would not have been ethical given the power dynamics between the clinician and client, as the clients may have felt obligated to participate. Therefore, the results of this study are limited in their generalisability to clients in similar populations, such as private practices and psychiatric hospitals that deal with a wide range of psychological problems. Unfortunately, not having information regarding psychological diagnoses in the current population prevents generalisation of the results to disorder specific populations. However, it is of note that no significant group differences in the private practices, psychiatric hospitals or university counseling clinics were noted, which provides some support for the generalisability of the findings. In addition, it was found that the mean subscale scores reported in the present study were consistent with those reported in previous studies using a range of clinical samples, which indicates that the present sample has a similar score on perfectionism as other clinical

populations.

The limited generalisability of the current population was considered at the outset of this research. As it was correctly predicted that most of the questionnaires would be returned anonymously, the possibility of conducting follow-up clinical interviews with participants was ruled out, and would have been too time consuming in a clinical population of this size. As there is popular consensus that simply asking clients to state their diagnosis on the demographic information is subject to inaccuracies in self-reporting (e.g., Kingal et al., 2008), this was not considered to be a useful method. Similarly, including a lengthy questionnaire to try to assess psychological diagnoses was not possible due to the otherwise resulting additional time requirements for each participant to complete the questionnaire battery (which already required 30-40 minutes to complete), and therefore this was also excluded on the basis that a longer questionnaire battery would be less likely to be completed. In addition, the validity of self-report questionnaires to assist in making psychological diagnoses has also received extensive criticism in previous research that has established that using a structured clinical interview, such as the well-known SCID-I/P (First, Spitzer, Gibbon, & Williams, 1996) as a diagnostic measure, is the most reliable and valid way of reporting psychological diagnoses (e.g., Zanarini et al., 2000).

The use of a symptom measure to provide information on levels of depression and anxiety, such as the DASS (Beck & Weissman, 1978), was also considered. However, this was excluded from the final questionnaire battery due to the additional time requirements. It was decided that due to the previously established consensus in the literature that perfectionism was associated with a wide range of psychological diagnoses (e.g., Enns & Cox, 2002); that it could be considered to be a transdiagnostic issue (e.g., Egan et al., in press); and the fact that the private practitioners had reported that at least 90% of their clients had been referred on the proviso that they met at least one DSM-IV (APA, 1994) diagnosis for an axis 1 disorder; that not having access to a formal diagnosis for clients in the present study was acknowledged as a methodological limitation in the present research. In hindsight, the incorporation of the DASS would have been a useful measure to include in the present questionnaire battery. It would have been interesting to incorporate a measure of psychopathology so that a direct comparison with DiBartolo et al.'s (2008) research that tested the mediational effect of core schemas between perfectionism and psychopathology, could have been conducted. As DiBartolo et al.'s (2008) research was published after the questionnaires in the present study had been collected this was not considered at the outset of data collection, however, further research would benefit by replicating the present research with the an added measure of psychopathology. Incorporating a measure of psychopathology would have also confirmed the existing consensus in the literature that perfectionism directly

contributes to the development of psychopathology, which can only be assumed based on the research consensus.

#### **2.4.7 Conclusions**

The current study has progressed understanding in the overall construct of perfectionism, and in particular has extended the literature on aetiological factors of perfectionism, culminating in the development and testing of an aetiological model of perfectionism. Predictions were made and supported to confirm the higher-order factor structure of the PBI (Parker et al., 1984), the FMPS (Frost et al., 1990), the Neuroticism scale from the NEO-FFI (Costa & McCrae, 1992) and the YSQ-SF (Young, 1998). Confirming these factors allowed an empirical test of the proposed model to be conducted using structural equation modeling and it was found that there was a direct relationship between Parental Expectations and Criticisms and Perfectionism, and between Neuroticism and Perfectionism, as predicted. Furthermore, evidence was provided for an indirect relationship between Mother and Father Affectionless Control and Perfectionism, and Neuroticism and Perfectionism, which were mediated by Disconnection and Rejection Core Schemas. This finding was consistent with predictions, and supported theoretical models (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999).

The predictions of a direct relationship between Affectionless Control and Perfectionism, and of an indirect relationship between Parental Expectations and Criticisms and Perfectionism that is mediated by Disconnection and Rejection Core Schemas, were not supported. As mentioned, this finding may be due to the different non-verbal implicit processes associated with Affectionless Control as compared to the more explicit verbal process of Parental Expectations and Criticisms that may require the formation of a meaning or schema to interpret the relationship between the parent and child. A qualitative investigation into clients' perceptions of the aetiological factors of perfectionism and the subsequent development of core schemas was suggested as a way of gathering more detailed information on the relationships between variables in the model and will be conducted as a further study in this investigation to provide additional information in this regard.

Additional future areas of research were also identified and included a replication of this study and a comparison of this aetiological model of perfectionism with Flett et al.'s (2002) aetiological model. Furthermore, simultaneously testing the current aetiological model and Shafran et al.'s (2002; 2010) maintaining model of perfectionism would be an area worthy of further investigation, as would further investigations into the aetiological factors that contribute to the development of positive perfectionism. As the main limitation in the present study was the lack of information regarding the psychological disorders of the clients in the



current clinical population, it was suggested that further research should also include an additional measure of psychopathology, or preferably be conducted in a large scale clinical sample, in which the psychological diagnoses had been determined using a structured clinical interview.

## **CHAPTER 3: STUDY TWO – A PHENOMENOLOGICAL CLINICAL INVESTIGATION OF AETIOLOGICAL FACTORS OF PERFECTIONISM**

### **3.1 Introduction**

Recent research has advanced knowledge of the construct of perfectionism, with a particular emphasis on definition and measurement as well as identifying a wide range of psychological disorders that are correlated with perfectionism (e.g., Enns et al., 2002; Shafran & Mansell, 2001, Egan et al., in press). Whilst research into the aetiological factors of perfectionism is less well developed, three salient aetiological factors have consistently been identified in the literature, namely parenting, personality and cognitive factors. These three factors have been studied almost exclusively using quantitative methodology. It should be noted that quantitative methodology offers some important advantages for studying aetiological factors, particularly when the methodology employed allows for inferences regarding direct and indirect relationships between variable to be made. Notwithstanding, it is becoming increasingly accepted that other methodologies that utilise a more descriptive approach to data collection offer an important adjunct to quantitative research (Riley, Lee, Cooper, Fairburn, & Shafran, 2007). The value of qualitative forms of research, such as descriptive case studies and interviews, lies in the ability to capture complex information that is idiosyncratic and rich in clinical detail (Denzin & Lincoln, 2000). That is, qualitative research allows for an analysis of data using in-depth interviews to study real-world clinical settings in order to generate rich narrative descriptions and formulate case studies, which is often prohibited by the nature of quantitative research (Patton, 2005).

Given the advantages of using different research methods (Kuper, Reeves, & Levinson, 2008a), there has been a substantial increase in the past few years in research employing mixed methodology with the overall idea that quantitative and qualitative research methods provide complementary functions (Yin, 2006). Linguard, Albert and Levinson (2008) state that “Mixed methods research combines elements from both qualitative and quantitative paradigms to produce converging findings in the context of complex research questions” (p.460). Mixed methodology studies have been noted to make valuable contributions to the understanding of many clinical issues in the fields of medicine and psychology (e.g., Benson & Britten, 2002; Noble, Nelson, & Turner, 2006), however many professionals have expressed concern about the widespread misunderstanding of the nature and use of qualitative and mixed methodology designs (e.g., Britten, 2005; Kuper et al., 2008a). Kuper et al. (2008a) have emphasised the importance of researchers matching the appropriate qualitative research methodology for the research question under consideration, stating that;

“...Different qualitative methodologies are useful for asking different sorts of

questions. Thus, just as randomized controlled trials, meta-analyses, and case-control studies are designed for answering different types of questions, different kinds of qualitative research are useful in studying a variety of problems. Further, these different qualitative research methods need to be appraised in different ways..."

Kuper et al. (2008a; p.337)

In the limited studies that have investigated perfectionism using qualitative methodology, one of the most common methodological designs has been that of case studies, reported by authors using various psychological orientations (Greenburg & Bolger, 2001; Greenspon, 2008; Hirsch & Haywood, 1998; Sorotzkin, 1998). According to Yin (1994), when compared to other qualitative methodologies, the strengths of case study designs are best applied to research questions where an in-depth examination of 'a case' in a 'real-life' setting is required. Yin (1994) stated that the case study design enables the investigation of complex topics that are not easily achieved by other methodologies and are relevant in two situations. First, when a descriptive or explanatory answer to a research question is required and second, when an in-depth, firsthand understanding of a case is required to illuminate a particular situation under investigation. Yin (1997) and Kuper, Lingard and Levinson (2008a) have rejected the historical notion that the case study is only an exploratory phase for other methods and emphasised that the version of the case study must be matched to the nature of the research question. Yin (1997) stated that there are three versions of case study design: explanatory, descriptive or exploratory. The choice of which case study design is employed in qualitative depends on the research question. Moreover, Yin (1997) stated that exploratory case studies should only be used;

"...when the available literature or existing knowledge base is poor, offering no clues for conceptual frameworks or notable propositions...a new empirical study is likely to assume the characteristic of being an exploratory study..." (p.236)

In contrast, explanatory studies are more appropriate when there is an existing phenomenon and a more detailed understanding to further illuminate the phenomenon is required (Yin, 1997).

As the existing literature on the aetiological factors of perfectionism was sufficient to propose a conceptual framework on which to base the proposed aetiological model of perfectionism in Study One, 'exploratory' case studies were deemed to be unnecessary for this purpose in the present research. However, the use of 'explanatory' case studies were ideally suited to the aim of the present study, which was to provide in-depth accounts of clients experiences regarding the development of their perfectionism in order to illuminate the clinical utility of the proposed model as an aid in formulation of individuals with elevated perfectionism in clinical practice.

The use of case studies has received some criticism in the literature for the lack of generalisability and possible researcher bias in investigation (Yin, 1994) and the lack of representativeness and reliance on retrospective accounts that can be inaccurate (Luck, Jackson, & Usher, 2006). These are important criticisms that need to be acknowledged when conducting case study research and highlight the need to follow established guidelines for qualitative research methodology. Therefore, the methodological design section of this study will demonstrate adherence to the recent recommendations outlined in the British Medical Journal to critically appraise the use of qualitative methods (e.g., Kuper et al., 2008b). It is noted that whilst adhering to these recommendations is important, the limitation of case studies having limited generalisability is insurmountable, nevertheless, the use of explanatory case studies to provide rich clinical detail to illuminate the practical use of the proposed aetiological model was deemed to be a complimentary adjunct to the existing quantitative study.

### **3.1.1 Qualitative Studies of Perfectionism**

Authors such as Riley and colleagues (2007) have noted that case studies provide a valuable contribution to the qualitative literature on perfectionism in spite of the difficulties associated with generalisability. However, in comparison to the quantitative literature there has been a paucity of research that has investigated perfectionism using descriptive methodology. Moreover, there have only been a few qualitative studies that have briefly investigated aetiological factors by incorporating limited questions about the development of perfectionism as part of a larger study into other areas of perfectionism (e.g., Slaney & Ashby, 1996). Furthermore, many of the descriptive case studies have naturally focused more on the treatment of perfectionism and have not reported extensive details about client history, which may highlight potential aetiological factors (Glover et al., 2007; Shafran et al., 2004).

The limited number of qualitative investigations into perfectionism have either utilised interviews that have been examined using theme analysis or alternatively have been reported in the form of descriptive case studies. A wealth of information has been derived from qualitative studies using theme analysis. Riley and Shafran (2005) investigated the mechanisms that maintained clinical perfectionism by conducting semi-structured interviews with a mixed sample of 21 participants. The sample was comprised of 14 nonclinical participants and seven clinical participants from a community mental health setting. These participants were divided into two groups based on the presence or absence of core psychopathology associated with clinical perfectionism. The interviews were conducted until a saturation of themes occurred. Several themes were identified in the majority of the participants with clinical perfectionism including rules and rigidity; self-critical reaction to failure; biases in thinking; fear driven and value driven behaviour; procrastination, avoidance;

safety behaviour; and positive reaction to success. These qualitative findings provide support for Shafran et al.'s (2002; 2010) cognitive-behavioural model of maintaining factors of clinical perfectionism.

Similarly, Rice et al. (2003) used a qualitative analysis to explore the meaning of perfectionism in a sample of nine undergraduate university students. Semi-structured interviews were conducted to examine themes that emerged in response to questions regarding how university students described perfectionism; the best and worst things about perfectionism; and what psychologists should know about perfectionism. It was found that having high personal standards appeared to be the defining feature of the construct. A further theme identified by Rice and colleagues (2003) was that maladaptive perfectionists were more likely than adaptive perfectionists to report greater levels of distress when they did not achieve a personal standard. These themes are consistent with several previous definitions of perfectionism that highlighted experiencing distress when high personal standards were not attained (e.g. Frost et al., 1990; Shafran et al., 2002).

Despite the addition to the literature from Riley and Shafran (2005) and Rice et al.'s (2003) qualitative research, these studies did not aim to investigate the aetiological factors of perfectionism and therefore the data gathered is not of direct relevance to the current study. In fact, Rice and colleagues (2003) stated that although they noted that recognition and achievement were two areas related to perfectionism that were reported in their interviews, their analyses were unable to explain these findings. They stated that, "It was not clear in our study if achievement/recognition resulted as a byproduct of the efforts of the perfectionist or if achievement/recognition was the motivation. Understanding these distinctions may be important steps in developing a revised model of perfectionism" (p.54). It is evident from this statement that further qualitative research into the aetiological factors of perfectionism and the relationships between these factors is required.

Neumeister (2004a,b,c) published a series of three studies based on twelve college students completing their honours year of study. From a pool of 290 students, an even number of students were chosen based on their high scores on either the SPP scale or the SOP scale of the HMPS (Hewitt & Flett, 1991a). The students had previously been identified as 'gifted' during their elementary school years. Neumeister's second study (2004b) is of particular relevance to the current investigation as she interviewed gifted college students opinions as to the factors contributing to the development of SPP and SOP. Neumeister (2004b) reported that in the six students who had high scores on SPP, several themes were identified, including an authoritarian parenting style that led to the development of beliefs that others had stringent expectations of them. Furthermore, the students reported that as a consequence of this belief

they developed a marked fear of disappointing others and equated their self-worth with their achievement. Therefore, Neumeister (2004b) hypothesised that these participants were striving for perfectionism in order to preserve their self-worth and prevent disappointing others. In contrast to SPP, different themes were identified for the students scoring high on SOP. These students believed that their perfectionism was an inborn characteristic, present from birth and that environmental factors cultivated their perfectionist tendencies. This belief was attributed to never being able to remember a time when they did not have perfectionistic standards. In particular, these participants consistently reported that their parents modeled perfectionistic behaviours and they believed they adopted these behaviours themselves. The students reported receiving authoritative styles of parenting, characterised by high parental expectations that they believed were supportive and in keeping with their previous high levels of early academic achievement. These students did not consider their parents to be critical of their performance as long as they tried their hardest, and reported that they always tried their best regardless of parental encouragement. For these participants, self-worth was identified as being related to meeting an internal drive for perfectionism, and they did not continually worry about meeting other's standards.

It is of note that the consistent reference to the role of parenting in perfectionism in Neumeister's (2004b) study is similar to the findings in Slaney and Ashby's (1996) who performed a criterion study of 30 people who considered themselves to be perfectionistic. Numerous questions were examined relating to the perceived meaning and consequences of perfectionism. Participants were specifically asked where they thought their perfectionism had come from. This question was answered almost unanimously, with 29 mentioning their parents as a source of their perfectionism. It was reported that women were more likely to cite both of their parents as the source of their perfectionism, whereas, men were more likely to mention one parent specifically.

Despite Neumeister's study (2004b) providing valuable qualitative information regarding students' perceptions of the development of their perfectionism, the author noted several limitations. These included the use of a retrospective design that was based on participants' perceptions of events, which was not correlated with data collected from parents. Furthermore, the predominant ethnicity of the group being Caucasian prevented generalisability to other cultures and the lack of a control group such as underachieving students. A further limitation is that the sample used a student population and therefore the generalisability to a clinical population is prevented. It is also of note that the general style of questioning used in Neumeister's (2004b) interview may have only examined automatic thoughts and not investigated deeper level beliefs or schemas (Egan, 2005). It may have been useful to extend the interview questions using Burn's (1980) downward arrow technique.

Cooper et al. (2004) incorporated this technique into semi-structured interviews to identify beliefs, schemas and early experiences to inform the development of their cognitive model of bulimia nervosa. The use of this technique allows participants to elaborate on what their underlying fears are if they do not achieve their perfectionist standards. For instance, it may have indeed been the case in Neumeister's (2004b) research that these students were worried about others' responses to them, such as rejection and disapproval, if they did not meet their own perfectionist expectations.

One qualitative study that used the vertical arrow technique to directly investigate perfectionism was conducted by Egan (2005). Egan (2005) used qualitative theme analysis to compare cognitions regarding failure to meet high standards and motivation to change in a clinical sample and an athlete sample. It was identified that the majority of clinical participants viewed themselves as failures or as not trying hard enough if they did not meet high standards. This was in contrast to the athletes who did not make negative evaluations about themselves. Egan's findings of beliefs pertaining to failure in perfectionistic clients are consistent with results in quantitative studies. In particular they are consistent with Frost et al.'s (1997) findings in a study that examined cognitions about failures monitored through journal recordings by students who were either high or low on CM on the FMPS (Frost et al., 1990). It was found that students high and low on perfectionism only differed on their beliefs about mistakes made. Participants who had higher CM scores believed that their mistakes resulted in more harm to themselves, were wrong, and morally reprehensible.

Egan (2005) and Frost et al. (1990) did not ask questions regarding the aetiology of perfectionism, as it was not consistent with the aims of their studies. It would therefore be of interest to use the vertical arrow technique as a means of accessing deeper level cognitions and core beliefs when asking questions about aetiological factors in future research.

In addition to using the vertical arrow technique, descriptive case studies also provide an opportunity to explore deeper level cognitions and beliefs and provide more in-depth history about individual clients. Therefore examining previous case studies could be a useful way of extracting information about the developmental origins of clients with perfectionism. Whilst there are numerous good examples of case studies of perfectionist clients, many of these studies note that they have taken a client history, however the details of this assessment are not reported in the level of depth that is required to extract information on developmental or aetiological factors (e.g., Egan & Hine, 2008; Fredtoft et al., 1996; Glover et al., 2007; Kutlesa & Arthur, 2007; Shafran et al., 2004).

Four case studies on perfectionistic clients reported in detail about patient history (Greenburg

& Bolger, 2001; Greenspon, 2008; Hirsch & Haywood, 1998; Sorotzkin, 1998). Greenburg and Bolger (2001) described the case study of a woman with depression triggered by the death of her baby. The woman reported that she elected not to be in the hospital room when her baby died, as she could not bear watching the event. She reported regretting her decision, which she subsequently believed to be a mistake. Through an exploration of her past using an emotion-focused orientation, she identified that during her upbringing she had learned the message that she could not make mistakes and had to be perfect in order to gain her mother's love and approval. She attributed the development of this belief to a history of physical abuse from her mother, who was also emotionally distant and had never told her that she was loved. The client came to believe that she was not good enough and used perfectionism as a way of trying to establish her worth and lovability to her mother, and subsequently other people in her life. Greenburg and Bolger's case study is consistent with several of the quantitative findings in the literature that identified an association between perfectionism and parenting history characterised by criticism and Affectionless Control, and more specifically a lack of emotional care and high levels of parental control (Enns et al., 2000; Stoeber, 1998). This case study is also consistent with cognitive theories of the development of core beliefs pertaining to low self-worth and Unlovability (e.g., Beck, 1995; Young, 1999), which contributes to the development of contingent beliefs pertaining to perfectionism.

Consistent with Greenburg and Bolger's (2001) case study description, Greenspon (2008) described a clinical vignette of a female client who had commenced psychotherapy with her husband to assist her with depression and marital conflict. Greenspon described the case of 'Rachel', a highly driven lawyer who found herself completing multiple tasks until they were perfect. This resulted in her feeling overwhelmed, exhausted and overcommitted. Rachel reported obsessing on the completion of these tasks and as a result had developed a chronic lack of sleep and depression. Furthermore, the differing levels of expectations between herself and her husband had culminated in a history of marital tension.

Greenspon (2008) reported on a psychodynamic approach to explore Rachel's beliefs regarding the origins of her perfectionism. Rachel was able to articulate that she had developed a belief that any mistake was a sign of inherent defectiveness and she subsequently used perfectionism as a way of trying to protect her low self-worth and gain acceptance and recognition as a person. Rachel was said to identify several possible family of origin factors that appeared to contribute to the development of this belief including having a perfectionist and critical father who provided intermittent love and acceptance in response to her excellent academic performances. The client also described that her mother had a long-standing history of depression and used alcohol as a soothing agent, and hence, was emotionally unavailable to her. Greenspon summarised Rachel's description of considerable conflict in her parent's



marriage, and that the only time that there was family harmony was in momentary response to her latest achievement. Greenspon stated that Rachel's family history resulted in her belief that in order to be worthwhile, significant, interesting and acceptable, she had to be perfect. She further believed that if she was perfect, that this might keep her family together. This clinical vignette is also consistent with quantitative research on aetiological factors of perfectionism, in its emphasis on a lack of parental bonding (e.g., Enns et al., 2000; Stoeber, 1998), high Parental Expectations and Criticisms (e.g., Chang, 2000; Neumeister, 2004b), and a family history of Neuroticism (e.g., Magnusson et al., 1996; Tozzi et al., 2004). Furthermore, Greenspon's (2008) description of the development of parenting and personality factors leading to the subsequent development of core beliefs relating to low self-worth and Unlovability is consistent with prominent cognitive theories advanced by J. Beck (1995) and Young (1994).

Hirsch and Haywood (1998) also described a case study of a perfectionistic patient, Mr. R, who had sought cognitive behavioural therapy to assist him manage his depression and anxiety. They reported that Mr. R professed to use perfectionism as his primary coping strategy. Hirsch and Haywood reported that his recent stressors of an increased workload and his partner's excessive drinking, combined with his belief that he had to be 100 percent successful in dealing with these stressors, had resulted in his depression and anxiety. They presented a formulation that a history of high parental expectations and a lack of praise had contributed to Mr. R's core belief that he was not good enough. Associated with this core belief were dysfunctional assumptions that if he did everything to a 100 percent level then people would not be able to see that he was not good enough and hence he developed perfectionism as a compensatory strategy. This case description is consistent with the previous quantitative findings of a strong association between high parental expectations and perfectionism (Bandura & Dweck, 1999; Chang, 2000; Neumeister, 2004b). Hirsch and Haywood's description that high parental expectations and low praise contributed to the beliefs about low self-worth is also consistent with cognitive theories that have suggested that a parental style characterised by low levels of care contribute to the development of core beliefs of low self-worth (e.g., J. Beck, 1995; Young, 1999).

Finally, Sorotzkin (1998) described a clinical vignette of an adolescent with depression and anxiety. Sorotzkin used a psychodynamic approach to identify several aetiological factors in the development of perfectionism, including growing up in a 'loveless' and 'cold' house, an emotionally distant mother and having a father who was critical, controlling and physically abusive. Sorotzkin reported that the adolescent said that as he was capable of performing well on an academic level, he developed the belief that if he performed perfectly his mother may show more interest and his father would have no behaviour to criticise. Furthermore,

Sorotzkin provided an interesting clinical observation through his work with perfectionist patients that if parental expectations of perfectionism are directly expressed either through overt verbalisations or constant criticism of less than perfect performances, children learn that perfectionism is a way of not feeling like a disappointment to their parents. He also noted that

“...there are other situations when there is no overt rejection, but rather a sense of emotional neglect.... children from such homes will often strive for perfection in the hope that they will thus merit the interest and approval of their parents. The need for perfection, in such cases, is often experienced as internally imposed” (p.2).

Consistent with the aforementioned case studies, Sorotzkin’s clinical vignette is also consistent with the previous quantitative findings on perfectionism, including parental bonding characterised by low care and high control (e.g., Enns et al., 2000) and parenting that was also highly critical and demanding (e.g., Bandura & Dweck, 1999; Chang, 2000). The description of developing perfectionist beliefs in an attempt to gain unmet emotional needs from parents is also consistent with several cognitive theories (e.g., Beck, 1995; Young, 1999). Furthermore, Sorotzkin’s clinical observations may provide one explanation as to how beliefs develop differently at conscious and unconscious levels dependent on the verbalisation of the parental expectation. This finding may help to explain findings such as Neumeister (2004b) who reported that perfectionism beliefs in self-oriented perfectionists appear to be internally imposed.

In summary, it appears that although the qualitative and descriptive research into perfectionism is sparse, the research from theme analysis studies and case studies respectively have yielded consistent findings. Of the two qualitative theme analysis studies that directly questioned participants as to their beliefs regarding the sources of their perfectionism, modeling of perfectionist parenting was identified as a recurrent theme (Neumeister, 2004b, Slaney & Ashby, 1996). Furthermore, analogous conclusions can be drawn from the four case studies describing perfectionist clients, which were consistent with quantitative findings and cognitive theories that emphasise low parental bonding, high Parental Expectations and Criticisms, Neuroticism, and Disconnection and Rejection Core Schemas. However, as stated previously, the findings of case studies need to be interpreted with caution due to the limited generalisability of such approaches, as well as the possible bias inherent in retrospective accounts (Luck et al., 2006; Yin, 1994). Furthermore, these case studies did not report adherence to qualitative methodological design, hence it is difficult to evaluate the clinical utility and scientific rigor of these studies.

Therefore, further research is required to directly investigate client’s perceptions of the aetiological factors to their perfectionism using qualitative research that demonstrates

adherence to established qualitative methods. According to Yin (1997), the use of ‘explanatory’ case studies, as opposed to ‘exploratory’ case studies would be best suited for this purpose, given that exploratory studies are only recommended when the existing literature is poor and prohibits the development of a theoretical framework to expand on. As previous research has consistently identified salient aetiological factors sufficient to propose a conceptual model outlined in Study One, explanatory case studies are well suited to provide more detailed information that can serve to further illuminate the existing research in the area. This research could provide an opportunity to gather in-depth client perceptions and ascertain more rich clinical information to add to the perfectionism literature and examine whether the descriptive data is in keeping with the findings of the literature using quantitative studies and enhance the clinical relevance of the current model. Therefore, the present study aimed to undertake explanatory case studies that focus on the aetiological factors of perfectionism.

More specifically, the aim of the present study was to evaluate whether participants’ perceptions of the aetiology of their perfectionism, which will be presented in the form of explanatory case studies, are consistent with the model proposed in Study One. This will provide more detailed information as to each aspect of the model in the current research design. This study is important in order to enhance the clinical relevance of the model, and provide further validation for the utility of the aetiological model as a template for guiding assessment, formulation and treatment planning. It is noted that this study was not intended to be a true exhaustive qualitative study and as such only a small number of clients were chosen to demonstrate the clinical utility of the model through the use of replication logic applied to explanatory case studies (Yin, 1997). As this research is descriptive and explanatory no hypotheses can be made. However, the themes that the clients perceive to be relevant in the development of their perfectionism that emerge from the case studies are expected to be consistent with research findings that indicate the following relevant aetiological factors: parenting styles characterised by low care and high overprotection; high Parental Expectations and Criticism, a personality style that is high on neuroticism; and the development of underlying Disconnection and Rejection Core Schemas consistent with those identified in Study One.

## **3.2 Method**

### **3.2.1 Participants**

Three participants were recruited for this study by asking clinical psychologists working in private practice to invite clients currently receiving treatment, whom they had identified as

experiencing high levels of pathological perfectionism to participate in an interview. The first participant was from the sample of 311 participants in Study One, so that further descriptive data could be derived from the sample that the aetiological model was based on. The remaining two interviews were conducted with clients' who did not participate in Study One. This was to ensure that the last two case studies were from a different clinical sample to examine if results were consistent with the current aetiological model and would enhance the clinical utility of the model. The demographic information that is relevant to each case study, will be reported in the results section. The decision to use a restricted sample size of three case studies will be discussed further in the design section below.

### **3.2.2 Design**

The importance of selecting an appropriate qualitative methodology for the research question was emphasised earlier in this literature review (Yin, 1994; 1997). Given the lack of formal guidelines available for conducting qualitative research and the concerns of misuse and lack of understanding of qualitative methodology in the recent increase of mixed methodology studies, Kuper and Reeves recently edited a series of six articles in the British Medical Journal with the aim of providing recommendations to enable critical appraisal of qualitative research (Kuper et al., 2008a). In the final paper in this series, six questions were concluded to be important when critically evaluating adherence to a recognised qualitative design (Kuper et al., 2008b). These questions will now be considered in turn in relation to the present design.

#### **3.2.2.1 Question 1: Was the sample used in the study appropriate to its research question?**

Kuper et al. (2008b) state that who to include in the sampling process is a critical question and should be guided by the specific research question in combination with an understanding that "...qualitative research is based in experience and in the construction of meaning" (p.687). It is therefore logical that when examining in-depth perceptions of the development of aetiological factors, clients who are currently engaged in psychological therapy for treatment of perfectionism and related psychological disorders are the most appropriate participants to include in the present study as opposed to interviewing people from other samples, such as students or participants from a community sample not currently engaged in treatment.

##### **3.2.2.1.1 Sampling Method**

Two of the major sampling methods recommended for use when conducting qualitative

interviews by Kuper et al. (2008b) were used in the present research design, namely critical case sampling and snowball sampling. Critical case sampling involves "...sampling cases that are predicted (based on theoretical models or previous research) to be especially information-rich and thus particularly illuminating" (p.688). Critical case sampling was the optimal choice for the sampling method in the present study given that the aim of the study was to conduct interviews with clients currently in psychological therapy to gain in-depth information as to whether the clients' perceptions of the development of their perfectionism were in keeping with the proposed aetiological model in Study One. It was hoped that these interviews could illuminate the clinical utility of the proposed aetiological model as an aid for assessment and formulation of perfectionism in clinical practice. To facilitate critical case sampling, the use of snowball sampling was used, which refers to sampling participants by requesting participants in an existing study to recommend others who they believe have experiences relevant to the research question. Therefore, the clinical psychologists who recruited their clients to participate in Study One were deemed to be in an optimal position to determine which of their clients had experienced aetiological factors of perfectionism that they considered to be particularly information-rich given the research question.

### ***3.2.2.1.2 Sample Size***

When determining the sample size, qualitative methodology does not have a predetermined number of participants and often sampling stops when saturation occurs and no new themes are found in new participants sampled (Kuper et al., 2008b). When case study methodology is used the first question to consider is whether one case study should be used (which has been undertaken in previous case studies in the perfectionism literature) or whether multiple case studies would benefit the research question (Yin, 1997). Yin (1993) recommends using replication logic, in which two or more case studies be used for congruence, however he advises against using multiple case studies as the challenging length of case study texts may detract from the initial logic of conducting a case study design. Yin (1997) stated that using replication logic through multiple case studies demonstrates external validity in qualitative research. Elderkin-Thompson and Waitzkin (1999) stated that two or three cases may be substituted for random sampling when the sampling procedure is purposive, as is the case with critical case sampling. They further recommend that when sampling is purposive it is helpful for the interviews to be driven by theory that can be justified to the reader. These recommendations were satisfied in the present study as three participants were interviewed and the questions in the interview were driven by salient aetiological factors identified in previous research and theory.

### **3.2.2.2 Question 2: Were the Data Collected Appropriately?**

Kuper et al. (2008b) recommended that the appropriateness of the data collection methods should be justified with reference to the research. Section 3.2.3 outlines the measures used in this study and demonstrates the reliability and validity of each questionnaire chosen. The questions included in the semi-structured interview (see Table 21) were developed to gain in-depth information and were based on each of the salient aetiological factors identified in the literature review.

#### **3.2.2.2.1 Triangulation**

Kuper et al. (2008b) caution about methodological challenges to qualitative data collection, such as the Hawthorn effect (Holden, 2001), by which the participants' responses may have been influenced by the presence of the researcher. To limit this effect, Kuper et al. (2008b) recommend using a technique called triangulation, whereby multiple methods of data collection or different sources of data are used in combination to provide a more comprehensive set of results. Yin (1997) states that construct validity is enhanced in case study research when multiple sources of evidence are used. In the present study, three types of triangulation were used. First, triangulation of methods was used by selecting five questionnaires that had been shown to have acceptable psychometric properties (see section 3.2.3). In addition, a structured diagnostic interview was used (The MINI; Sheehan et al., 1998). Furthermore, a semi-structured interview was used in an attempt to gain in-depth perceptions regarding aetiological factors of perfectionism (see Table 21).

The second triangulation method that was used was the mixed methodology design of using different, complementary types of quantitative and qualitative data. In Study One, structural equation modeling was used to test a proposed aetiological model on a sample of 311 participants. In the present study, three explanatory case studies will be used through critical case sampling to determine if the participants' perceptions are in keeping with the aetiological model. Moreover, Yin (1994; 1997) states that one of the preferred methods of demonstrating internal validity of case studies is by 'pattern matching', whereby the themes identified through the case studies are compared against an initially stipulated pattern of findings in a separate study. Therefore, the extent to which the findings of the present study were consistent with the findings in Study One will be explored in the discussion section.

Finally, triangulation of different contexts was used in the present study. The aim of the research question was to conduct case studies of clients in treatment for their perfectionism and participants from different private practices were selected to triangulate data using different contexts. One participant was selected from the initial sample in Study One, while

the remaining two participants were sought from separate practices.

### **3.2.2.3 Were the Data Analysed Appropriately?**

A clear description of a systemic form of data analysis is recommended for qualitative studies (Kuper et al., 2008b). In Aita and McIlvain's (1999) review of the literature and methodological issues in conducting case study research, it was suggested that the themes that were identified in case study research should be presented first, and a substantive case report or clinical vignette should then be taken from the data (Lincoln & Guba, 1985; Stake, 1995). Thus, the findings in the present study will firstly be reported collectively as themes in response to each question and then followed by presentation of a case report. Aita and McIlvain (1999), and Stake (1995) recommend the use of a template format comprised of separate sections to present case reports, hence the typical psychological formulation of reporting predisposing factors, presenting problems and perpetuating factors (e.g., Hawton et al., 1989), will be used in the present study.

#### **3.2.2.3.1 Member Checking**

To limit the interpreter bias problem inherent in case study designs, member checking is recommended, whereby the findings of the study are shown to the participant to ascertain that they are consistent with their experiences (Kuper et al., 2008b; Hammersley & Atkinson, 1995). However, Barbour (2001) cautioned that respondent validation can be distressing or exploitative to the participant. Given the ethical concerns that could arise from requesting participants currently engaged in psychological therapy to validate their own case studies, it was deemed more appropriate for clinical psychologists who were not familiar with the study or the participants to engage in response validation. Therefore, in accordance with this recommendation, the interviewer sent two clinical psychologists a copy of the transcript of the interview (with identifying details removed) and the written case study and asked if they believed that the case study was in accordance with the transcript. The clinical psychologists signed confidentiality contracts as specified in the participant consent form (see Appendix I). When the clinical psychologists identified a discrepancy between the transcript and the case study, this was discussed and rewritten by the investigator until the clinical psychologist and the researcher believed that the case report was in accordance with the transcript. Response validation in draft case study reports is stated as an important way of demonstrating construct validity in case study research (Yin, 1997).

#### **3.2.2.4 Question 4: Can I Transfer the Results of this Study to my own Setting?**

Two key indicators of transferability, stated by Kuper et al. (2008b) in qualitative research,

are firstly whether the findings contribute to advancing theoretical knowledge and secondly, the extent to which the findings resonate with published literature and whether the reader believes the sample from which the participants are derived is sufficiently similar for the findings to be transferrable to their own context. The findings of the present study provide an opportunity to gather in-depth client perceptions, which can provide rich clinical information to add to the existing literature on perfectionism. The extent to which these findings resonate with existing literature will be explored in the discussion section of this research. Finally, notwithstanding the limitations of generalisability of case studies, the findings of this study may be useful for psychologists in clinical settings who are treating people with perfectionism.

#### **3.2.2.4.1 *Phenomenology***

Reeves, Albert, Kuper and Hodges (2008) state that qualitative research needs to be explicit about the theoretical approach that was adopted to guide the research process and illuminate the findings of the study. Reeves et al. describe phenomenology as one of the most common qualitative theoretical approaches to gather data in the form of in-depth interviews to explore how individuals perceive and attribute meanings to their experiences in order to make sense of the world. Phenomenology differs from grounded theory, in which the overall aim is to generate theories and hypotheses, and instead focuses on providing insight into subjective experiences of individuals to illuminate an existing phenomenon (Lingard et al., 2008; Reeves et al., 2008). Reeves et al. stated "...given the emphasis, phenomenological studies do not attempt to generate wider explanations; rather their focus is on providing research accounts in a specific setting" (p.631). Therefore, it is important to state from the outset that this study was based on phenomenological theory and the transferability is limited to the specific clinical settings that the present sample was derived from. The aim of the present study was to illuminate the clinical utility of the aetiological model in clinical settings for people who are in treatment for perfectionism and was not intended to be generalised to wider clinical settings. However, in line with the recommendations, the extent to which the findings accord with previous published literature will be explored in the discussion section of this study.

#### **3.2.2.5 Question 5: Does the Study Adequately Address Potential Ethical Issues, Including Reflexivity?**

Given the nature of qualitative research involves obtaining and presenting in-depth personal experiences of participants, ethical issues of anonymity and confidentiality are of critical importance (Kuper et al., 2008b). The major ethical concern in the present study was that of the confidentiality of the participants' information. This was addressed by only using



participants' first names and linking names to the interview transcripts via numerical code. The names themselves were stored separately from interview transcripts in a separate locked cabinet. Only the chief researcher had access to this data. Five years after the research was concluded all data will be destroyed. The ethical issues surrounding data collection and storage were provided to the participants in a consent form (See Appendix I) and Curtin University of Technology Ethics Committee approved the project prior to data collection (see Appendix J). To protect the privacy of the participants, some key demographic details have been changed, including name, age and profession. These modifications were deemed to have no bearing on changing the case studies in any meaningful way, but were an important means of protecting confidentiality.

Kuper et al. (2008b) also state that qualitative researchers need to ensure mechanisms to mitigate potential distress that may arise from participants sharing in-depth perceptions regarding their personal circumstances. In the present study, participants were provided with contact details of appropriate professionals, including their own clinical psychologist, in the event that they felt distressed during the course of, or after, the interview (see Appendix I).

#### ***3.2.2.5.1 Reflexivity***

Reflexivity refers to the recognition by the researcher that their decisions made within the research program will influence the context and meaning of the phenomenon under investigation (Horsburgh, 2003). Reflexivity acknowledges that the researchers profession, gender, social status, ethnicity will influence the researchers choices within the methodology, including the research question, data collection method and the power relationship between the researcher and participants (Kuper et al., 2008). It is, therefore, readily acknowledged that objectivity and neutrality in relation to the research question, sampling procedure chosen and data analysis was not possible and represents a limitation of the present study. This limitation will be explored further in the discussion.

#### ***3.2.2.5.2 Question 6: In Conclusion, Is what the Researcher did clear?***

The final recommendation provided by Kuper et al. (2008b) is to ensure that the sampling procedure, data collection and analysis were made clear. In summary, the present study used a phenomenological approach with the aim of obtaining in-depth perceptions of participants currently completing psychological therapy to examine if those perceptions were in accord with the proposed aetiological model in Study One. Critical case sampling was employed as the sampling procedure as the research question was purposive and chosen via snowball sampling from clinical psychologists to provide information-rich cases predicted on the basis of the previous research and model. Triangulation of methods, types of data, and contexts

were taken to improve the external validity of the study. Furthermore, the recommendations of reporting the themes arising from the case studies, then writing the case reports that were checked against the interview transcripts by the participants clinical psychologists were adhered to in order to enhance the internal validity of the study. Limitations of transferability and reflexivity within a phenomenological study were acknowledged and potential ethical considerations were discussed.

### **3.2.3 Measures**

#### **3.2.3.1 The Depression, Anxiety, Stress Scale**

The DASS-21 (Antony et al., 1998) was used to assess the range of depression, anxiety and stress symptoms for the three participants (See Appendix G for a copy of the DASS-21). The DASS-21 consists of 21 items comprising three scales of seven items taken from the original 42-item DASS (Lovibond & Lovibond, 1995). The Depression scale measures low positive affect, hopelessness and low self-esteem. The Anxiety scale measures the subjective feeling of fear, autonomic arousal and physiological hyperarousal. The Stress scale assesses agitation, negative affect and tension. Respondents rate each item on a 4-point likert-type scale ranging from 0 (did not apply to me at all), to 4 (applied to me very much) based on their experiences in the past week. The score range for each subscale is from 0 – 28, with higher scores indicating greater severity ranges of levels of depression, anxiety and stress. An example of a question from the Depression subscale is “I was unable to become enthusiastic about anything”.

Research has consistently found good psychometric properties for both the DASS (Lovibond & Lovibond, 1995) and the DASS-21. A three-factor solution has consistently been found across samples to reflect the original three scales (e.g., Gloster, Rhoades, Novy, Klotzsch, Senior et al., 2008). A wide range of studies in clinical populations (e.g., Brown et al., 1997); community populations (e.g., Crawford & Henry, 2003); and across different cultures, such as Spanish speaking patients (Daza et al., 2002), have found the DASS-21 to have excellent internal consistency for the Depression scale (range = .91 to .97); the Anxiety scale (range = .88 to .95) and the Stress scale (range = .88 to .95).

Research on the DASS-21 (e.g., Gloster et al., 2008) has also demonstrated excellent convergent validity with other measures of depression, such as the BDI-II (Beck et al., 1996); measures of anxiety such as the BAI (Beck & Steer, 1990); and measures of stress, such as the Penn State Worry Questionnaire (Brown, Antony, & Barlow, 1992). Furthermore, sound criterion related and predictive validity has been found for the DASS-21 with the three scales found to be consistently associated with a number of psychological symptoms and disorders

(Brown et al., 1997; Gloster et al., 2008). These studies found that the Depression scale was associated with mood disorders, the Anxiety scale with panic disorder and the Stress scale with generalised anxiety disorder.

### **3.2.3.2 Young Schema Questionnaire – Short Form**

The YSQ-SF (Young, 1998) is a 75-item self-report questionnaire. This was described previously in Study 1 (see section 2.2.2.3)

### **3.2.3.3 Mini-International Neuropsychiatric Interview**

The M.I.N.I. (Sheehan et al., 1998) is a well-known structured interview that screens for all Axis I psychiatric disorders, as defined by either the DSM-IV or ICD-10. The M.I.N.I. takes approximately 30 minutes to administer and is comprised of two to four screening questions for each disorder. If the screening questions are positively endorsed, the additional symptom questions are then asked. The M.I.N.I. contains modules for major depressive episode, dysthymia, mania episode, hypomania episode, agoraphobia, panic disorder, post traumatic stress disorder, obsessive-compulsive disorder, social phobia, anorexia, bulimia, alcohol dependence or abuse, and psychoactive substance dependence or abuse. There are also additional questions for risk of suicide or psychotic syndromes (see Appendix H for a copy of the M.I.N.I. Screen).

The M.I.N.I. can be used to establish or confirm diagnostic hypotheses or for systematic data collection (Marques & Zuardi, 2008). The M.I.N.I. has been consistently reported to possess sound psychometric properties. The M.I.N.I. has been found to have good inter-rater reliability evidence by kappa coefficients ranging between 0.88 and 1 (Lecrubier, Sheehan, Weiller et al., 1997). Good test re-test reliability has also been reported with coefficients ranging between 0.76 and 0.93 over a one year period (Sheehan et al., 1988). More recently, in a large study of 120 clinical patients, Marques and Zuardi found that the M.I.N.I. possessed good kappa coefficients for internal consistency (range between .65 – .85), excellent predictive validity (range between .88 – .99) and excellent discriminant validity (.90 – .99).

The M.I.N.I. is a widely used diagnostic screening tool with good psychometric properties, thus, this measure was used in the present study to screen for psychiatric disorders in the three clients in the following case studies. It is also advantageous that the M.I.N.I. is relatively brief and can be administered in a timely manner.

### **3.2.3.4 The Multidimensional Perfectionism Scale (FMPS)**

The FMPS (Frost et al., 1990) is a 35-item self-report measure of perfectionism. It was described extensively in Study One (see section 2.2.2.2).

### **3.2.3.5 Neuroticism Extraversion Openness (NEO)-FFI**

The Neuroticism scale from the NEO-FFI (Costa & McCrae, 1992) is a 12-item subscale. The Neuroticism scale was described earlier in Study One (see section 2.2.2.5).

### **3.2.3.6 Parental Bonding Instrument (PBI)**

The PBI (Parker et al., 1979) is a 25-item self-report questionnaire, which provides a measure of mother and father bonding separately. This questionnaire was described previously in Study One (see section 2.2.2.4).

## **3.2.4 Semi-structured clinical interview on client's perceptions about aetiological factors**

A semi-structured clinical interview was developed for this study. The questions contained in this interview can be seen in Table 21. Section one of the interview included questions relating to insight into the aetiological factors that contributed to the development of perfectionism. The recommended practice with critical case-sampling is to conduct in-depth interviews based on previous research or theoretical models (Kuper et al., 2008b). Therefore, the questions in the present study were developed to explore each of the salient aetiological factors associated with perfectionism that were identified in the previous literature. Section Two of the interview contained questions pertaining to gathering a general psychological assessment history. Participants were asked to provide examples related to each question.

This study was intended to be a descriptive study, in which the responses derived from the three clinical interviews could be reported in the form of case studies. The use of theme analysis, using an expansive technique until saturation point of themes is reached, is not used in a descriptive case study given the limited sample size (Denzin & Lincoln, 2000).

However, the use of replication logic across two-three case studies is recommended and will be adhered to in the present study (Elderkin-Thompson & Waitzkin, 1999; Yin, 1993). The aim of this study was to ask participants questions relating to pre-defined areas that were of theoretical interest based on the previous literature review and model developed in Study One. The semi-structured interview was used to provide a range of clinically relevant questions rather than using an open questioning in qualitative research that would have allowed themes to emerge but might not have allowed for specific questioning of

psychological history. Therefore, the semi-structured clinical interview questions were similar to questions that may be utilised in an initial clinical psychology assessment session, with a particular focus on gathering information on predisposing factors, and identifying relevant cognitions and beliefs.

Table 21

*Semi-structured clinical interview questions*

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**Section One: Aetiology**

1. Do you see yourself as being a perfectionist or having high standards? (could you tell me what you mean by this?)
2. What factors, do you believe have contributed to the development of your perfectionism?
3. What function does your perfectionism have in your life?
4. Do you believe that your perfectionism works for you (or has worked for you in the past) and if so why?
5. Do you think that your parenting or upbringing contributed to the development of your perfectionism and if so how?
6. Have you always been prone to worry and if so how do you think your high standards relate to this?
7. Do you believe that being perfect is linked to you having your emotional needs met from other people and if so how?
8. Do you think that not being perfect would change the way people respond or feel about you and if so how?
9. What would be the worst thing for you about not being perfect/ not achieving high standards?
10. Is there anything else that you think is relevant to your perfectionism/high standards that I have not asked you?

**Section Two: General psychological history**

11. What were the main problems you were experiencing when you entered therapy?
12. How long had you been experiencing these problems?
13. What do you think may have caused these problems?
14. Are there any current situations that you feel are impacting on these problems?
15. Is there anything that makes these problems better or worse?
16. How long have you been in therapy?

## 17. Have you ever had past therapy?

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### 3.2.5 Procedure

Ethical approval to conduct the research was obtained by the Curtin University Human Research Ethics Committee. Clinical Psychologists working in private practice, who were known to the researcher, were asked to invite clients who they believed experienced high levels of maladaptive perfectionism to participate in the descriptive study (see Appendix I for a copy of the informed consent form for the descriptive study). Participating clients were asked to provide their first name and contact telephone number to the clinical psychologist who then forwarded details to the author. The first three clients who were eligible for the study were contacted via phone and asked by the researcher to participate in the interview, which they all agreed to. An interview time was agreed upon and participants were informed that they would be sent out a questionnaire battery to complete after the interview and were asked not to review the questionnaires before hand. The questionnaire battery was sent out prior to the interview so that it could be completed immediately after the interview in order to maximize the chance of completion. The interviews were conducted via telephone at the pre-arranged time and were all recorded and then transcribed verbatim after each interview by the researcher. Interviews for all participants were therefore conducted in their home. As the interview was estimated to take 90 minutes, followed by 45 minutes to complete the questionnaire battery, it was decided that conducting the interviews via telephone would be pragmatic in maximising the chance of participation given the extra time requirements that attending an interview in a University setting would have necessitated.

The researcher asked the questions in the semi-structured clinical interview. The questions were asked verbatim and for each question the participants were asked to provide an example that they believed was relevant. In addition, probe questions such as “can you tell me more about that” were frequently asked in order to encourage the participant to elaborate when necessary. Furthermore, in section one of the interview, question nine was asked using the successive questioning technique known as downward arrow questioning (J. Beck, 1995; Burns, 1980). Following the semi-structured clinical interview, the M.I.N.I. (Sheehan et al., 1998) was administered and answers were transcribed as before. The range of the interview times was 80 minutes to 120 minutes, and the average time was 100 minutes. Finally, after the completion of the interview and the M.I.N.I., participants were asked if they could open the envelope that contained the questionnaire battery used in Study One and the DASS-21 (Antony et al., 1998). Participants were asked to complete the questionnaire on the same day, and return it to the researcher via mail. Results of the questionnaires were provided to each participant’s clinical psychologist upon request (see Appendix I). It was important that

participants completed the questionnaire after the interview was conducted so that the questions could not bias their interviews.

### 3.3 Results

Each case study consists of a descriptive analysis of the interview and questionnaire responses. The results from the questionnaire battery are depicted in Table 22. The results for the YSQ –SF (Young, 1998) are reported as percentage of belief reported for the purposes of writing up the case studies, whereas in Study One these results needed to be calculated as a raw score for the purposes of SEM.

Table 22

*Test results for each questionnaire for the participant in each case study*

	Participant 1: Anne	Participant 2: Sandra	Participant 3: Jane
<b>FMPS</b>			
Concern over Mistakes	42	34	39
Personal Standards	33	34	33
Parental Expectations	10	9	11
Parental Criticisms	4	8	11
Doubts about Actions	16	11	16
Organisation	27	22	30
Total Perfectionism (excluding organisation)	105	96	110
<b>NEO-FFI</b> Neuroticism score	36	41	40
<b>PBI</b> Father Protection	35	9	14
<b>PBI</b> Father Care	9	14	14
<b>PBI</b> Mother Protection	35	13	28
<b>PBI</b> Mother Care	21	17	21
<b>YSQ</b>			

Emotional Deprivation	0%	40%	0%
Abandonment/Instability	60%	40%	80%
Mistrust/Abuse	0%	80%	0%
Social Isolation/Alienation	0%	40%	100%
Defectiveness/Shame	0%	40%	60%
Failure	0%	0%	0%
Subjugation	40%	20%	20%
Self-sacrificing	100%	20%	60%
Emotional inhibition	0%	20%	0%
Unrelenting standards	100%	100%	100%
Entitlement/Grandiosity	0%	40%	0%
Insufficient control/self discipline	0%	40%	0%
<b>DASS – Depression scale</b>	16	4	25
<b>DASS - Anxiety scale</b>	20	2	21
<b>DASS – Stress scale</b>	36	12	35

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Note. a. PBI = Parental Bonding Inventory (Parker et al., 1979), b. NEO-FFI = Neuroticism Extraversion Openness to Experience Five Factor Inventory (Costa & McCrae, 1992), c. FMPS = Frost Multidimensional Perfectionism Scale (Frost et al., 1990), d. YSQ-SF = Young Schema Inventory – Short Form (Young, 1998)

### 3.3.1 Descriptive Analysis of Interview Responses

In the following section, the results and themes for each of the questions on the development of perfectionism will be briefly presented to provide a context for the case studies. These responses represent a description of the answer to each question provided by the three participants.

#### Question 1: Insight into perfectionism

In response to question 1, when participants were asked if they identified themselves as a perfectionist, all acknowledged that they did. When asked to elaborate on their views on



perfectionism, all participants linked having high standards and achievement striving. Their definitions are as follows:

“I’ve always tried to do everything the best that I can and I’m never quite happy with how I manage to do that so I’m constantly trying to do it better” (Anne)

“Everything I do has to be at a high standard otherwise it’s just not good enough...if I don’t perform well I know I should perform better” (Sandra)

“I like to be the best at everything. I like to be good at everything I do...It’s almost impossible to achieve those super hard standards” (Jane)

### **Question 2 – Perceived contributing factors to perfectionism**

Participants were asked what factors they believed contributed to the development of their perfectionism. All participants stated that their family was an important contributing factor. The three participants stated parental modeling of high standards was an important factor, with a typical response reported as:

“I guess everyone in my family has always done so well...I wanted to be like my Mum and Dad because they were also really good” (Jane)

“I think my father is very much a perfectionist himself although I didn’t realise this until later in life now I’m kind of having problems” (Anne)

Furthermore, a common response to this question was that participants’ attempted to gain approval from parents and others by being perfect. For example:

“I always wanted to be like them [my parents]. I just wanted people to be proud of me and happy” (Jane)

“If I was doing something it was always putting my best foot forward. Everything I did was to not hurt my reputation kind of thing” (Sandra)

One participant also stated a history of childhood bullying and described perfectionism as a way of coping with this:

“I had to set high standards for myself. Like it was that was kind of my outlet to get away from everything” (Sandra).

### **Question 3 – Function of perfectionism**

When asked about the function that perfectionism played in their life, all participants stated the desire to be perfect was a motivating factor to attain higher marks and status. Moreover, they stated that motivation to work harder and achieve more allowed them to gain better academic marks and occupational or sporting positions than their peers. A typical response was:

“motivation – it provides a drive to do things when normally, well some of my subjects at uni

are boring and it doesn't matter if I don't like what I'm doing, I have to be really good at it and I do more" (Jane)

"I got to play (sport) ...I'd perform really well for our club and I was looked up to by a lot of the kids and everything so it was really good for me to have that" (Sandra)

One participant showed an insight into how the function of perfectionism was starting to change for her:

"When I went through uni I always worked hard and ... did well at school and work..I'd get there and do that and then it would be what's next? ...I used to think it was a positive thing but now I'm starting to think it's more of a negative thing that's causing more problems than it's worth" (Anne)

#### **Question 4 – The benefits of perfectionism**

Participants were asked whether they believed their perfectionism worked for them in the present or past. Participants unanimously believed that their perfectionism had worked for them in the past, however they also expressed insight into the excessive standards not being necessary to achieve their goals. Two of the three participants believed that the construct still worked for them in some areas of their life. A representation of these views is as follows:

"I definitely think it's worked well in the past in that it has helped me get where I am and it sort of made me push myself harder to achieve, but [when] I look back and think the grade I needed to get into my course was a lot lower than I actually got, and all the way through I stressed myself out" (Anne)

"It definitely has worked in the past and it does work when I'm playing (sport). At the moment its half and half trying to get well but its not working because I want everything to happen right now and it obviously doesn't. I've ended up getting really sick and pushing myself so hard that I've just pushed myself to the end and hit rock bottom" (Sandra)

#### **Question 5 – Perceived influence of parenting**

When participants were asked whether their parenting or upbringing contributed to their perfectionism they all reported that this was indeed the case. Several different reasons were given in respect to parenting. Two participants reiterated the influence of parental modeling of perfectionism:

"I've always known my dad as a perfectionist...I do remember he always worked very long hours...and things taking longer than they should because dad was always trying to do things very well" (Anne)

"My whole life I'd tried to be part of the family like one of these really amazing people and I never felt like I fitted in" (Jane)

Furthermore, seeking parental provision of emotional needs was also commonly cited as influential in the development of the construct. A response that represented the desire for parental recognition through perfectionism was:

“I was looking for that praise because I wasn’t getting it from the family...I’d put the hard work in so why wouldn’t I get the praise and that kind of stuff, and their help” (Sandra)

### **Question 6 – Perfectionism and Neuroticism**

In this question, participants were asked about their tendency to worry and how they thought this was related to their high standards. The participants believed that they had always had a propensity for worry and that this worry seemed to play a motivating factor in their achievement:

“Yes definitely, I worry about everything...I think it makes me worry a little bit more because I set a lot higher standards for myself so I worry that I’m not going to achieve that so if I didn’t have that high standard then everything would be OK then there wouldn’t be a worry for me” (Anne)

“I beat myself up about what I have done and what haven’t I said and then I worry about what’s going to happen tomorrow and it relates to my high standards I guess because I just want everything to be alright”. (Jane)

“I’m always psyching myself up and preparing myself so I don’t upset my standards. Being a perfectionist to try and keep the standards up. I always look ahead and am really insightful to what I’m doing and make sure I’ve got every opportunity to do the best I can” (Sandra)

### **Question 7 – Perceived link between perfectionism and emotional needs**

When asked if they believed that their perfectionism was linked to having emotional needs met from other people, the participants reported in the affirmative and stated several examples of emotional needs. These examples included being perfect in an attempt to be understood and accepted, included in the family, to receive praise and reassurance regarding self-worth and to obtain their parent’s love and attention. A typical response was:

“It’s like I seek reassurance from my Mum and brother...and love...I guess that I never feel that I’m the sole focus of anybody. Is that because I’m not worthy of that?” (Jane)

“I worry that everyone’s going to be disappointed in me if I don’t achieve what I’ve achieved before....I’m probably (seeking) just acceptance” (Anne)

### **Question 8 – Perfectionism and other people’s perceptions**

Participants were asked if they believed other people would change the way they felt or responded to them if they were not perfect. The participants provided mixed responses to this question. One participant believed that people would think negatively of her if she was not a perfectionist:

“The thing is that everyone is so disappointed, like, when I fall off the bandwagon” (Jane)

The other two participants both stated that whilst they used to believe that people would think negatively if they stopped being perfect, since working with their psychologist they have started believing this would not be the case. Responses included:

“since I’ve been going and having sessions with my psychologist, I’m starting to realise that it wouldn’t affect me. It probably wouldn’t change the way they think of me, but I’m still coming to terms with that, and trying to prove it to myself” (Sandra)

“I don’t think it would and that is what my psychologist is always trying to tell me. There’s no need to do it, and people are not going to say she shouldn’t be doing that, they will always act the same, and they are still going to love you and that kind of thing” (Anne)

### **Question 9 – Consequences about not being a perfectionist**

When the downward arrow technique (Burns, 1980) was used to explore what the worst thing about not being a perfectionist would be, the participants’ responses revealed schemas of failure, abandonment and low self-worth. The responses were as follows:

“I think I’d feel like a failure (successive questioning)...I’d feel I was letting everyone down (successive questioning)...that they wouldn’t need me I suppose. Then I’d be a very lonely person” (Anne)

“Probably just not being out and not having the opportunities I’ve had (successive questioning)...I think it would be the self-esteem and everything as well and have a big impact on everything” (Sandra)

“I would rather be dead than just being completely alone (successive questioning)...not being perfect and people saying I was not worth it and ending up alone” (Jane)

### **Question 10 – Other issues of relevance**

Participants were asked if there was anything else of relevance to the development of their perfectionism. The participants listed varied reasons, including competitiveness with other team members and how their perception of their family they held in their childhood differed from how they subsequently viewed their family when they became an adult. These responses were as follows:

“I think I’d be really peeved off if someone else got it (sporting achievement) that I knew probably wasn’t as good as me” (Sandra)

“(I thought) that my family were perfect and amazing, well subsequently my parents have divorced and that happened when I was 20 and my Mum and Dad are definitely not on their pedestal...and I guess that helps in some ways” (Jane)

### 3.3.2 Case study One – Anne

#### Presenting Issues

Anne was a married female in her 30s working in a professional job, who at the time of the interview had attended six sessions of therapy with a clinical psychologist. She had not attended previous therapy. Anne presented for treatment following feeling depressed and anxious over the past six months. She described experiencing symptoms consistent with recurrent major depressive episodes, characterised by a persistent low and irritable mood, a lack of interest and satisfaction in previously enjoyable activities, low energy and motivation, diminished sleep and marked weight gain. Anne attributed her depression to a combination of work stress and feeling let down by her friend after she had devoted six months towards assisting her with planning her wedding. Anne believed that her friend had not expressed gratitude or reciprocated her help when it came to planning her own wedding the following year. Anne reported that the catalyst for seeking psychological therapy was that she felt “sad all the time and couldn’t stop crying and didn’t really know why”.

Anne further reported experiencing symptoms consistent with panic disorder. She reported experiencing panic attacks in response to escalating work stress. Anne reported that becoming a junior partner at her firm had resulted in her increased work responsibilities and she felt unable to delegate and set appropriate limits at work. Anne described herself as a perfectionist at work and at home “I’ve just always tried to do everything the best that I can and I’m never quite happy with how I manage to do that. I’m constantly trying to do better”. Anne reported that her perfectionism resulted in her spending excessive time on tasks and constant achievement striving that rarely made her feel happy. She was aware that her perfectionism led to her feeling exhausted and depressed. She noted that her brother “has a lot of similar problems and has been seeing a psychologist”.

Anne also described symptoms consistent with social phobia, characterised by being fearful of being in social situations in which she might say or do the wrong thing, which often led to avoidance of these situations. She reported “I guess I just always worry about what other people think of me and other people’s perceptions of me”. Furthermore, Anne reported a long history of bulimia nervosa and that she had developed excessive eating behaviours as a means of coping with underlying issues. She reported that she gained 15kg in the past year. Anne reported experiencing intermittent periods of binge eating since she was 16 years of age. She attributed the onset of these eating difficulties to feeling anxious about performance at school. “I got to the stage when I was studying that if I wasn’t stressing about something or worrying about it then I’d worry why I wasn’t worried.” Finally, Anne described experiencing symptoms consistent with generalised anxiety disorder, characterised by a persistent worry

about her work, relationships, finances and future situations.

### **History/predisposing factors**

Anne reported that both her mother and father had modeled perfectionist behaviour in regards to work and home duties respectively. She stated “I’ve always known my Dad as a perfectionist, everything has to be just so, everything he does he does really well....he worked very long hours....and things always take longer than they should because Dad was always trying to do things very well”. Anne noted that her mother was a perfectionist in regard to cleaning and arranging the home when she was growing up, however that her mother was reluctant to ask her father or children directly for their help. Anne recalled that her mother “freaks out about everything and she gets very negative and she whinges about it a lot and makes comments....myself, my brother, my Dad – we’d just do things I suppose to shut her up even when we think it’s over the top we don’t want to tell her that because she totally freaks out. It’s easier just to do what she wants and get it over, but she won’t actually ask”.

Anne noted that her parents had high expectations of herself and her brother, however she believed that they were not critical of their performance. “My parents always encouraged me, they never pushed me...I don’t ever remember them saying that I’d disappointed them... but they always made me and my brother think that we could excel at anything that we put our minds to...when I did well at something, it made them happy..... I suppose pleasing them became very important as well so once I made them happy I wanted to do it again, even better...I know now looking back why it wouldn’t have mattered at all, but as a child that’s how I saw the whole situation”.

Anne reported that she felt loved by her mother and father while she was growing up. However, she reported that she did not believe that she could discuss her problems with her parents. Anne reported that her mother cared, but she would not discuss her problems with her due to the worry it appeared to cause. Furthermore, Anne reported that her father did not validate her feelings, and therefore she kept her problems to herself. However, Anne reported that she was viewed as the ‘caretaker’ in the family. “My friends and family are fairly dependent on me to do things for them, ... when ever there’s a problem I’m always the one that they call...I feel like I can’t say no because they’re going to be upset with me and its going to change our relationship....I suppose that I feel like that’s what I’m supposed to do to be a good friend or daughter or sister...If I say I can’t, what good am I, I suppose”.

Anne described a history of anxiety since childhood, “I definitely worry about everything, I always think the worse thing is going to happen”. Anne reported that although never formally

diagnosed, she believed that her mother and father may have experienced a history of anxiety.

Anne described experiencing core beliefs pertaining to being rejected and ultimately being alone. It is hypothesised that she developed beliefs pertaining to perfectionism and subjugating her own needs to please others as a way of trying to prevent her feeling of abandonment/rejection. She noted that if she was not perfect “I think I’d feel like a failure....I’d feel I was letting everyone down and myself down and I suppose I wouldn’t be any good to anybody....they wouldn’t need me I suppose and I’d be a very lonely person”.

### **Perpetuating/maintaining factors**

Anne reported engaging in a number of unhelpful thinking styles. She described many instances of dichotomous thinking in regard to not being perfect at home and at work “it would kind of be like the end of the world, of a life as I knew it I guess”. Anne also reported significant avoidance, which was a maintaining factor. She reported she would avoid social situations if she felt anxious about her appearance or when she feared she may have offended someone. Anne reported that she had a supportive relationship with her partner for the past 10 years, whom she had recently married. She reported feeling unable to talk to him, and therefore internalised her emotions in that relationship.

### **Test scores**

Anne’s scores on the M.I.N.I. (Sheehan et al., 1998) indicated that she received diagnoses of recurrent major depressive episodes, panic disorder, agoraphobia, social phobia, generalised anxiety disorder and bulimia nervosa. As can be seen in Table 22, Anne’s scores from the questionnaires were consistent with her verbal reports. Anne’s level of Neuroticism was in the “very high” range. When assessing her PBI scores, she was ranked in the “affectionless control” quadrant for her father (high Protection and low Care) and the “affectionate constraint” quadrant for her mother (high Care and high Protection). With respect to her DASS-21 scores, Anne scored in the “moderate” range of functioning for depression and in the “extremely severe” range of functioning for anxiety and stress. Finally, when reviewing her YSQ-SF scores, it can be seen that Anne endorsed 100% of the items on the unrelenting standards and subjugation schemas and endorsed 60% of the items on the Abandonment/Instability schema. When Anne’s FMPS subscale scores are compared to the comparative table of FMPS mean scores depicted in Table 7 in Study One, it can be seen that the CM and PS score were both above average; her score on DA was consistent with the previous studies and her scores on PE and PC were below average.

### **Formulation**

It appears that Anne had a long-standing history of anxiety that she noted since childhood.

Anne may be genetically predisposed to experiencing anxiety as there appears to be a family history of the same. It is not possible to ascertain the genetic contribution of familial anxiety to her presenting difficulties. However, a clear history of parental modeling of perfectionism was evident in the family. Anne reported a history of high parental expectations, which she was able to meet repeatedly through early academic success. Anne reported that she developed perfectionist schemas in order to please her parents and attain their recognition and approval. Anne's parental rearing style was characterised by high levels of control, which appeared to be expressed through expectations and encouragement to always do her best. Anne's father exhibited low parental care evident by being unable to validate her emotional needs. Whilst her mother's parenting was characterised as exhibiting high levels of parental care, Anne did not believe she could discuss her problems with her mother due to her propensity to worry and not be able to regulate her own emotions. Anne was placed in a position of over-responsibility from a young age and was viewed as the problem-solver in the family. It appears that this may have led to the development of subjugation beliefs and a tendency to put others needs ahead of her own.

Overall, it appears that Anne received the implicit message that if she wanted to gain her parents' attention and praise, she needed to develop beliefs and corresponding behaviours pertaining to perfectionism and subjugation. It is hypothesised that Anne developed an underlying fear of being alone/abandoned in response to the parental bonding style she experienced. That is, her parental care and interest was perceived as being contingent on whether she was perfectionist in her academic studies, and whether she behaved as a 'perfect' daughter to whom the family could turn. If she did not engage in this behaviour, parental care and attention was removed. Anne's perfectionist and subjugating behaviour appeared to lead to anxiety, which naturally escalated during times of stress, and resulted in her feeling overloaded, exhausted and to subsequent depression. Through a lack of parental validation, Anne did not learn to express her emotions, and therefore she internalised her anxiety. It appears that she used binge eating as an attempt to sooth her emotions. Finally, it appears that dichotomous thinking styles, difficulties with assertiveness and setting appropriate limits and avoidance maintain these core schemas, and continue her cycle of depression and anxiety.



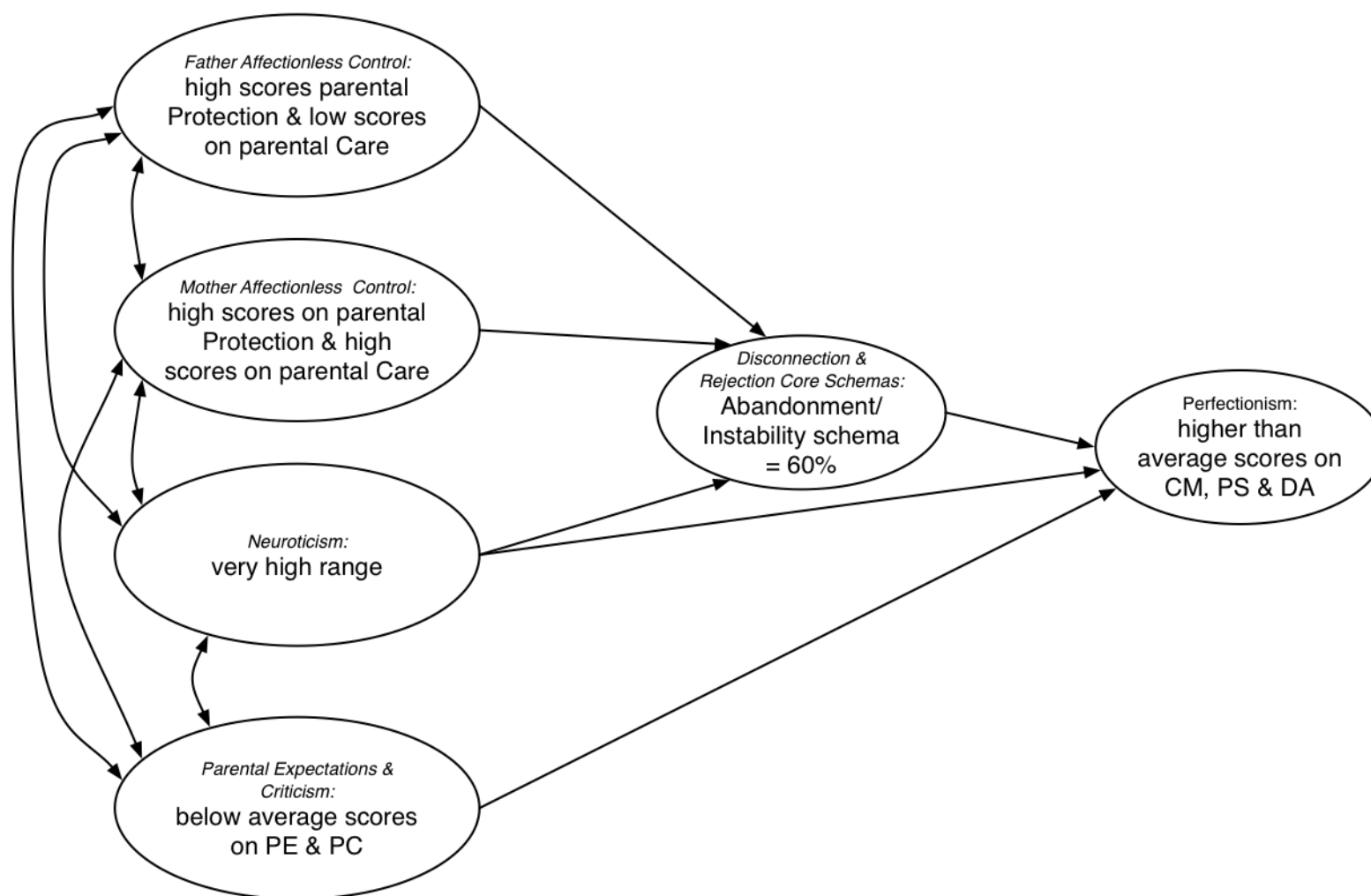


Figure 7. Anne's questionnaire scores in relation to the aetiological model

### 3.3.3 Case Study Two – Sandra

#### Presenting Issues

Sandra is a single woman in her early 20s studying at University. At the time of the interview Sandra had attended a total of seven sessions with her clinical psychologist. Sandra had attended sessions with her psychiatrist on an intermittent basis for 2 years prior to starting psychological therapy. Sandra reported having four prior hospital admissions for depression and suicidal ideation, and had attended group therapy during these admissions.

Sandra reported experiencing symptoms consistent with a history of bipolar affective disorder and dysthymia. Sandra reported that she was not currently feeling depressed, and that her levels of anxiety and stress were relatively low. Sandra had been discharged from hospital one month prior to the interview, and that thus far her mood had been well maintained through a combination of lithium and psychological therapy to assist her to manage her mood and stress levels more effectively.

Sandra described herself as a perfectionist, especially in regard to her sporting performance. She reported “I play (sport) at a state level and everything I do has to be at a high standard otherwise it’s just not good enough... I get really [irritated] at myself if I don’t perform well because I know I should perform better”. Sandra believed that her perfectionism was a contributing factor to her recent hospital admission for depression. “I ended up getting really sick and pushing myself so hard that I just pushed myself to the end and hit rock bottom”. More specifically, she was aware that her perfectionism and associated stress levels appeared to have an adverse impact on her bipolar affective disorder. She stated “the illness started getting on top of me.... I started doing little things wrong because I was tired and also mentally tired that I couldn’t physically keep that standard anymore and I started getting really annoyed with myself that I wasn’t keeping up that standard and it was just going in a big circle and I was just punishing myself for not being able to do it and beating myself up”.

Sandra reported a long-standing history of depression, which met the diagnostic criteria for Dysthymia. Sandra reported having three hospital admissions between the ages of 19 and 22. She reported experiencing a persistent low mood since the age of 15, which she attributed to childhood bullying and being raped at age 14. Sandra reported suicidal ideation had been a key factor in her depression. Sandra reported that during a low mood her perfectionistic thoughts regarding her difficulties with managing her mood seemed to exacerbate her depression and anxiety. She stated “when I get depressed I’ve just tried so hard to get out of the mood and then I get frustrated with myself because I can’t and I end up getting really annoyed with myself and beat myself up and then I’ve just started punishing myself for it and

my way is to hurt myself or I get suicidal very easily and start planning”.

Sandra further described experiencing symptoms consistent with generalised anxiety disorder, characterised by a persistent worry about her sporting performance, relationships, and other's thoughts about her reputation. Furthermore, Sandra reported experiencing symptoms consistent with panic disorder and post traumatic stress disorder. Sandra stated that her traumatic experience was being raped at school when she was 14 years of age, and that she regularly experienced intrusive distressing thoughts, images and nightmares about this event. Sandra would often experience panic attacks in response to her PTSD symptoms.

### **History/predisposing factors**

Sandra believed that her history of being raped and of experiencing childhood bullying for nine years were the main predisposing factors to the development of her perfectionism. Sandra described her perfectionism as a coping strategy that had developed to assist her to deal with these traumatic experiences. She stated “I was really badly bullied as a child all through school so I became really independent...I was raped at school when I was younger...I had to set my own standards for myself...like it was my outlet to get away from everything...it was my way of showing that I was good enough and then it kind of counteracts those things....everything I did was not to hurt my reputation”.

In addition to experiencing a history of traumatic events, Sandra believed that the parenting she received, played an important predisposing role in the development of her perfectionism. Sandra believed that low parental care and a lack of encouragement from both parents resulted in her trying to be perfect to attain their praise and recognition. In this regard, Sandra stated “they [her parents] would never like over-react, it was always like good job well done. It was never like oh my god you're an angel over the top....and I think I was looking for more recognition than that....like being a younger kid you want that praise for such achievement”. Sandra stated that when she did not receive recognition and encouragement from her parents, she tried to seek these emotional needs from other people through her perfectionism. She stated “because they [my parents] weren't giving me the huge recognition, I might have started looking for it in other people...like other parents at (sport).... I always got on better with the adults than the kids [because] they would ask about what I'd been doing.... I was looking for praise because I wasn't getting it from my family.”

Sandra reported that her parents modeled perfectionist standards. She reported that her father was a perfectionist at work “Dad was always working and still works from Monday to Saturday afternoons”. Sandra also reported that her mother used to be a state sport player. Of note is that, Sandra reported that she did not experience high parental expectations or

criticisms in regard to her performance. She reported that her parents did not directly express their expectations and that it was difficult to elicit high levels of praise from either of her parents. Therefore Sandra believed that she set her own expectations at a high level in order to try and gain the emotional needs she desired from her parents. Sandra reported that her “Mum was always trying to dull it down a bit so that my sister wouldn’t get upset by it [her high achievements] because she never did as well.... so I always thought that was a bit unfair... I’d put the hard work in so why wouldn’t I get the praise and that kind of stuff”. With respect to her father he reported that “he never pushed us, but he was so subtle, and to get good praise out of him was really good.... he was always straight faced... he had a really tough upbringing”.

Sandra reported that she did not feel like he had a supportive relationship with her parents and found it difficult to confide in them. Sandra stated “I never told my parents about anything that happened. I didn’t have that relationship with my Mum. She didn’t know anything about the bullying or the rape until (recently). That’s why I got so independent as I was hiding those huge things..... I decided to put the pressure on myself”. Sandra attributed these difficulties with parents to experiencing a lack of emotional attunement and validation throughout her childhood. He stated “If I tried [to express] myself in front of mum she’d say why are you so upset, there’s no need to be upset – she doesn’t understand how high the standards really are for me”. Finally, Sandra reported that there was no history of familial depression or anxiety, however he recalled that she always felt anxious for as long as she could remember.

Sandra believed that the traumatic events she experienced in her childhood and her parenting resulted in low self-worth, and that she engaged in perfectionistic behaviour as a way of trying to protect and improve her self-worth. Sandra stated that due to the traumatic events she had experienced, parental care and acknowledgement became even more important to her. Sandra stated “I just wanted to be acknowledged [from parents] for how hard it was keeping those standards up”. Sandra reported that he felt unable to reduce her perfectionism as she was fearful that she would no longer have any way of trying to improve her low self-worth and this may exacerbate her depression. Sandra stated that if he was no longer perfect, “I would think that my standards were dropping and my reputation would get ruined and those things... and just feeling like I know that it would drop my self-worth and self-esteem really badly and I know I’d be in a really bad way from that angle and I’d beat myself up so much that I’d get quite scared of myself”.

### **Perpetuating/maintaining factors**

Sandra described several possible maintaining factors to her perfectionism. Sandra described

engaging in dichotomous thinking styles relating to her sporting performance. Sandra reported that she always wanted to be perfect in her practice and competitions, and that this resulted in her no longer experiencing enjoyment from these activities. Sandra further described avoidance of social situations involving peers her own age, as these interactions appeared to trigger her PTSD symptoms. In addition to the avoidance behaviour perpetuating her PTSD symptoms, this behaviour appeared to result in reduced options for social support, as Sandra reported not feeling that she had close friends she could confide in. Finally, Sandra's perfectionist thoughts regarding managing her mood appeared to result in self-criticism that appeared to perpetuate her anxiety and depression.

### **Test results**

Sandra's scores on the M.I.N.I. (Sheehan et al., 1998) indicated that she met the diagnostic criteria for bipolar affective disorder, dysthymia, generalised anxiety disorder, panic disorder, agoraphobia and post traumatic stress disorder. As can be seen in Table 22, Sandra's test results indicate that her level of Neuroticism was in the 'very-high' range. Sandra also reported that her parental bonding, as seen in the PBI results, indicated high levels of parental control and low levels of care. These results indicated that her parenting could be classified as Affectionless Control from both parents. When examining Sandra's scores on the FMPS in relation to the range of mean scores depicted in Table 5, Study One, it can be seen that she had higher than average scores on CM and PS; average scores on the PC scale and below average scores on the DA and PE scales.

On the YSQ, Sandra endorsed core schemas of Unrelenting Standards to a 100% level. She also reported that he endorsed 80% of the items on the Mistrust/Abuse schema. Interestingly, her levels of depression, anxiety and stress were all within the "normal range of functioning" on the DASS. This may be attributable to her recent hospital discharge and that she was currently feeling in control of her mood and stress levels.

### **Formulation**

Sandra reported that she had a long-standing history of anxiety and depression. Sandra attributed the onset of her psychological difficulties to several predisposing factors including a high level of Neuroticism, traumatic experiences and low parental care and validation. Sandra reported that these factors resulted in her beliefs pertaining to mistrust and abuse and low self-worth/defectiveness. In an attempt to protect and improve her self-concept she developed perfectionism as a way of trying to receive parental care and recognition. Sandra's perfectionist behaviour appeared to result in her feeling exhausted, stressed and depressed. This cycle appeared to have exacerbated her mood swings associated with her bipolar affective disorder. When experiencing depressive moods, her perfectionistic thinking

regarding her difficulties with mood management appeared to perpetuate her anxiety and depression. An additional perpetuating factor included dichotomous thinking about her sporting performance. Furthermore, avoidance of social situations appeared to perpetuate her PTSD and panic disorder and prevent her from learning psychological techniques to manage her anxiety more effectively in these situations.

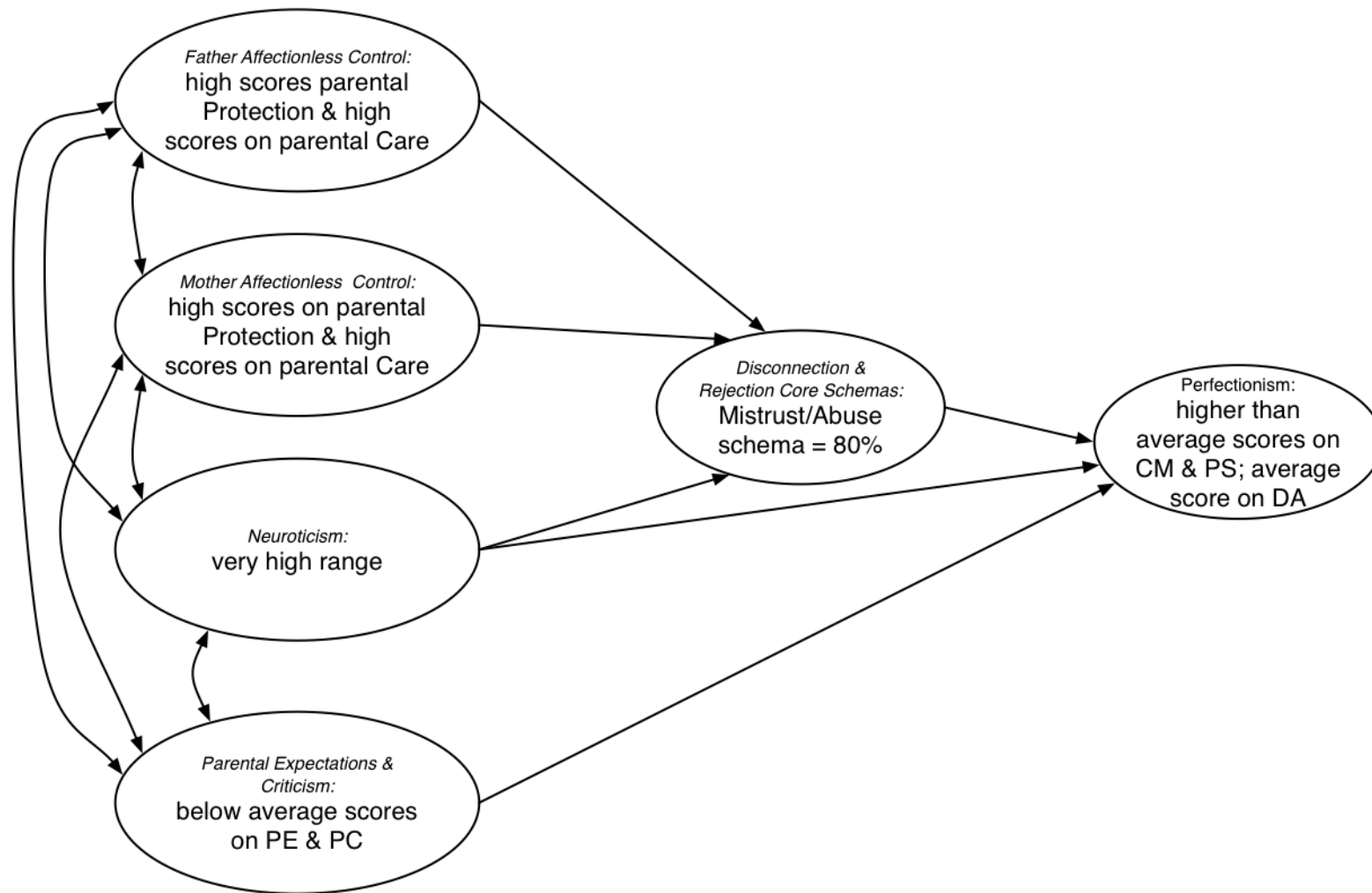


Figure 8. Sandra's questionnaire scores in relation to the aetiological model

### 3.3.4 Case Study Three - Jane

#### Presenting issues

Jane is a single woman in her early 20s who commenced therapy four years ago after being referred by her school psychologist to a psychiatrist, and then subsequently to a clinical psychologist. She has attended approximately 75 sessions in total. Jane is currently a university student.

Jane reported experiencing panic attacks and her first major depressive episode during her final year of secondary school. Jane attributed her difficulties during her final year to a culmination of anxiety and stress regarding her academic performance. She described herself as a perfectionist, “I’d always, always been a worrier and a perfectionist. I’d always been doing things 110% and not just 100%, but it was in Year 11 and 12 (final year), especially year 12 when I was trying to be perfect the whole time... In year 12, I just crumbled, it just all got too much. You know, 16 years of just being amazing and happy, I just couldn’t do it anymore – I was exhausted.”

Jane reported that the stress she experienced during her final year resulted in numerous physical problems, for which she was hospitalised. During this hospitalisation she was forced to miss some of her final exams and her final grade was calculated based on her grade- point average. Jane reported that this experience contributed to her depression and stated that “year 12 was the worst year of my life, well, one of them... “I didn’t get 98, I got 97.65 and basically my world ended there for a while”.

Jane also described a history of eating disorders. She reported that following her final year of secondary school she started to experience symptoms consistent with anorexia nervosa. During the following three years Jane had several hospital admissions that included having a nasal-gastric tube. Jane described herself as a ‘recovering anorexic’.

Jane reported that she continues to experience symptoms consistent with generalised anxiety disorder and social phobia. She described a tendency to worry about academic work, her part-time work, her relationships with others, and events in the world. “Oh I just worry all the time. I worry about things I did in the past and things are going to happen in the future, and worry, worry, worry.” In relation to her anxiety in social situations, Jane described feeling anxious over what others may think about her and often avoids situations that she doesn’t feel she can deal with effectively. “I want everything to be under my control and I know what I’m going to say, and I know I’m not going to say the wrong thing more importantly”. These statements are consistent with her high levels of reported Neuroticism.



### **History/predisposing factors**

Jane agreed that she was a perfectionist “I like to be the best at everything. I like to be good at everything”. Jane was able to identify several possible predisposing factors that may have contributed to her perfectionism. Jane reported a history of familial psychological difficulties, however she reported that these had not been formally diagnosed. Jane reported that upon reflection her mother appeared to have experienced previous difficulties with depression, anxiety and eating disordered behaviour. She reported that her father had experienced depression and she believed he was an alcoholic. Jane reported being unaware of these difficulties as a child and stated “It’s actually quite funny looking back at it now but I always thought that my family was perfect”. Jane’s parents separated one year ago and she reported being able to see the problems in the family after that time.

Jane described her mother and father as having a passive-aggressive style of communicating. Jane recalled examples of her mother being depressed and when asked if anything was wrong her mother would say that she was fine and then withdraw to her bed for three consecutive days. Jane also recalled that her father did not tell anyone when he went into hospital for an operation and then becoming angry that her family could not guess that something was wrong.

Jane reported that her parents had high expectations of her, however she believed they were in keeping with her abilities. Jane stated that her parents always emphasised her trying her best rather than being the best. She recalled her parents saying “all we wanted you to do is just try your best but you don’t have to be the best”. She clarified that she always did try her best and her parents never criticised her academic performance. “They’ve always said that you just have to do your best in everything you do and I guess I knew that I didn’t always have to do my best but I always wanted to do my best.... I always tried my best, that wasn’t even an issue. I would say of course, why wouldn’t I put in a 100% effort”.

Jane reported that she had experienced parental modeling of perfectionism from her mother and father. Jane reported feeling that she did not feel as perfect as the rest of her family. Jane reported “I always thought my family were perfect. I would put my mum on a pedestal. My dad was smart... he was a state (sportsman)...my mum (excelled in her high school] and was (ranked number 1 in a sport she played)”. However, Jane reported feeling like she was not quite as smart as the rest of her family. She stated “my whole life I’d tried to be part of the family, like one of these really amazing people and I never felt like I fitted in... it was more like I could never measure up to them.”

Jane further reported that she might have developed perfectionism as a way of receiving

praise in her family. She stated “I guess everyone in my family has always done well... my brother has always excelled at sport” (he played at a state level) “he was always champion boy...I always put him up on a pedestal and I wanted to be like him and I wanted to be like my mum and dad because they were really good. I always wanted to be like them. I just wanted to make everyone happy and I just wanted people to be proud of me”.

Jane reported parental differences with respect to bonding. She considered her mother to demonstrate more caring behaviour than her father. When she was admitted to hospital for anorexia nervosa, she stated “my Mum was there a lot but my Dad and brother kind of just opted out”. Jane stated that she always felt that she was continually striving for her parents praise and this appeared to result in the development of a sense of contingent self-worth. This is evident in statements such as “I always just wanted my parents to be proud of me... and love [me]...I think, if I’d walked under a bus I don’t think anyone would notice and it’s not like it’s their fault, they’ve got so much to contend with in their lives that I don’t think I really matter...I guess that I never feel that I’m the sole focus for anyone...is that because I’m not worthy of that?”

Interestingly, despite descriptions that her parent’s care was not as evident as she needed, Jane believed that her parents had been emotionally supportive and that it was due to her own tendency to mask her feelings that they were unable to meet her emotional needs. She stated “I really feel like my family did everything they could to meet my emotional needs and I don’t want to put them down at all...I’ve always talked about being happy, bright Jane on top of the world...every now and then sometimes I get really upset at my friends and family because they don’t realise that I’m really not OK.”

Jane stated that her parents had difficulty with emotional attunement, and in an attempt to elicit caring behaviour from her parents, she would starve herself in the hope that her parents would notice and care about her. However, she reported that this was ineffective. Jane described her mother and father as demonstrating high levels of parental control in regard to her emotions. She recalled that her father would tell her that she should just start eating again and that she was being selfish if she did not. Jane also described that her parents’ emotional connection appeared to be contingent on her excelling academically and always being happy. She described that her parents’ emotional connection was withdrawn when she did not behave this way. Jane stated “when I fall off the bandwagon, everyone is kind of disappointed in me, and sometimes I’m horrible and I think if I don’t contact them, how long will it be before they contact me?”.

Jane reported developing several Disconnection and Rejection Core Schemas. She described

strong beliefs associated with Abandonment/Rejection, a fear of Social Isolation and Defectiveness. Jane reported developing secondary, or contingent, core beliefs as a way of coping with her Disconnection and Rejection Core Schemas. These secondary beliefs pertained to relate to being perfect with respect to her performance and her mood, as well as sacrificing her own needs in order to help others. This link is evident in her several of Jane's statements: "I would rather be dead than just being completely alone. Not being perfect and people saying I was not worth it and ending up alone. I would rather be dead and at least to have people remember me as being like a good person and doing everything she could rather than dropping that facade and being myself".

Jane believed that her self-worth and social inclusion was largely based on her perfectionism and ability to please others. She stated that her biggest fear was that if she wasn't perfect "people won't give me the time of day. If I didn't try always to be the best and always to be a really good person and always try to be a really good friend, then why would they give me the time of day? Because I don't really feel that I'm worth that much without trying to be good and so – I hate the word perfect, but so perfect all the time".

### **Perpetuating/maintaining factors**

Jane described several perpetuating factors that appeared to be associated with her core schemas. She described a tendency to engage in the cognitive distortions of mind reading/predictive thinking. Specifically, Jane believed that other people would think negatively of her if she were not perfect and therefore continued to try to attain perfection in her academic studies, appearance and in the outward projection of her mood. Jane also described dichotomous thinking in relation to being perfect to be worthwhile. She stated "there are so many factors, like trying to look good...and attractive and also friendly so that people can respect me, it's just exhausting".

Jane also described difficulty with assertive communication, which was particularly evident when it came to expressing her needs in intimate relationships. For example, she wanted to be in a monogamous relationship with her current partner but felt unable to directly express this need. Furthermore, Jane reported struggling with asking for work experience from companies and that this was adversely affecting her studies.

Finally, Jane reported continuing her self-sacrificing behaviour and reported that she was continuing to focus large amounts of her time and energy on her friendships but felt unable to express her own needs and feelings in this regard. She stated that she was constantly trying "to be someone who is understanding and always there for their friends and listen, and at the same time be there for them in the bad times, but then have fun with them. But that, kind of,

[doesn't] extend to a two-way street - I didn't want them to think I wasn't 100% at all times".

### **Test scores**

Jane's scores on the M.I.N.I. (Sheehan et al., 1998) indicated that she met the diagnostic criteria for panic disorder, agoraphobia, recurrent major depressive episodes, generalised anxiety disorder, and social phobia. As can be seen in Table 22, Jane's test scores reported in the questionnaires were in keeping with her verbal reports. When comparing Jane's FMPS scores to the range of mean subscale scores cited in Table 5, Study One, it can be seen that Jane scored higher than average on subscales of PS, CM and DA; average on the PC subscale; and below average on the parental expectations subscale. Jane's level of Neuroticism was in the "very high" range. Jane's scores on the PBI were in the Affectionless Control quadrant for her father bonding (high control and low care) and the Affectionate Constraint quadrant for her mother bonding (high care and high control). With respect to her DASS-21 scores, Jane scored in the "severe" range of functioning for depression and in the "extremely severe" of functioning for anxiety and stress. Finally, when reviewing her YSQ-SF scores, it can be seen that Jane endorsed the Unrelenting Standards and Social Isolation/Alienation schemas to a 100% level; the Abandonment schema to an 80% level; the Defectiveness/Shame and Self-sacrificing schemas to a 60% level.

### **Formulation**

Jane's long-standing difficulties with depression, anxiety and an eating-disorder appear to stem from a complex array of factors. In addition to the possibility of a familial history of depression and anxiety and high levels of Neuroticism, there appeared to be clear parenting styles that led to the development of Disconnection and Rejection Core Schemas and subsequent perfectionism. More specifically, parental modeling was evident and high parental expectations consistently emphasised 'always trying to do your best'. It appears that provision of parental care and control was linked with the development of core beliefs. Jane appeared to receive limited parental care and praise for excelling and being happy. However, on occasions where she expressed negative feelings and/or could not cope, parental care and approval appeared to be withdrawn. These parenting styles appeared to lead to the development of beliefs pertaining to a fear of Abandonment and Defectiveness. Furthermore, a strong core schema regarding Social Isolation appeared to result from not feeling she was good enough to be included in the family. Jane appeared to develop secondary or contingent beliefs regarding being perfect and self-sacrificing her own needs. Jane's anxiety and depression appear to be maintained by behaviours that continually reinforced these core schemas including continually striving for perfectionism in her work, appearance and mood; difficulties with asserting her needs and not seeking support from friends due her desire to appear perfect and internalise her emotions.

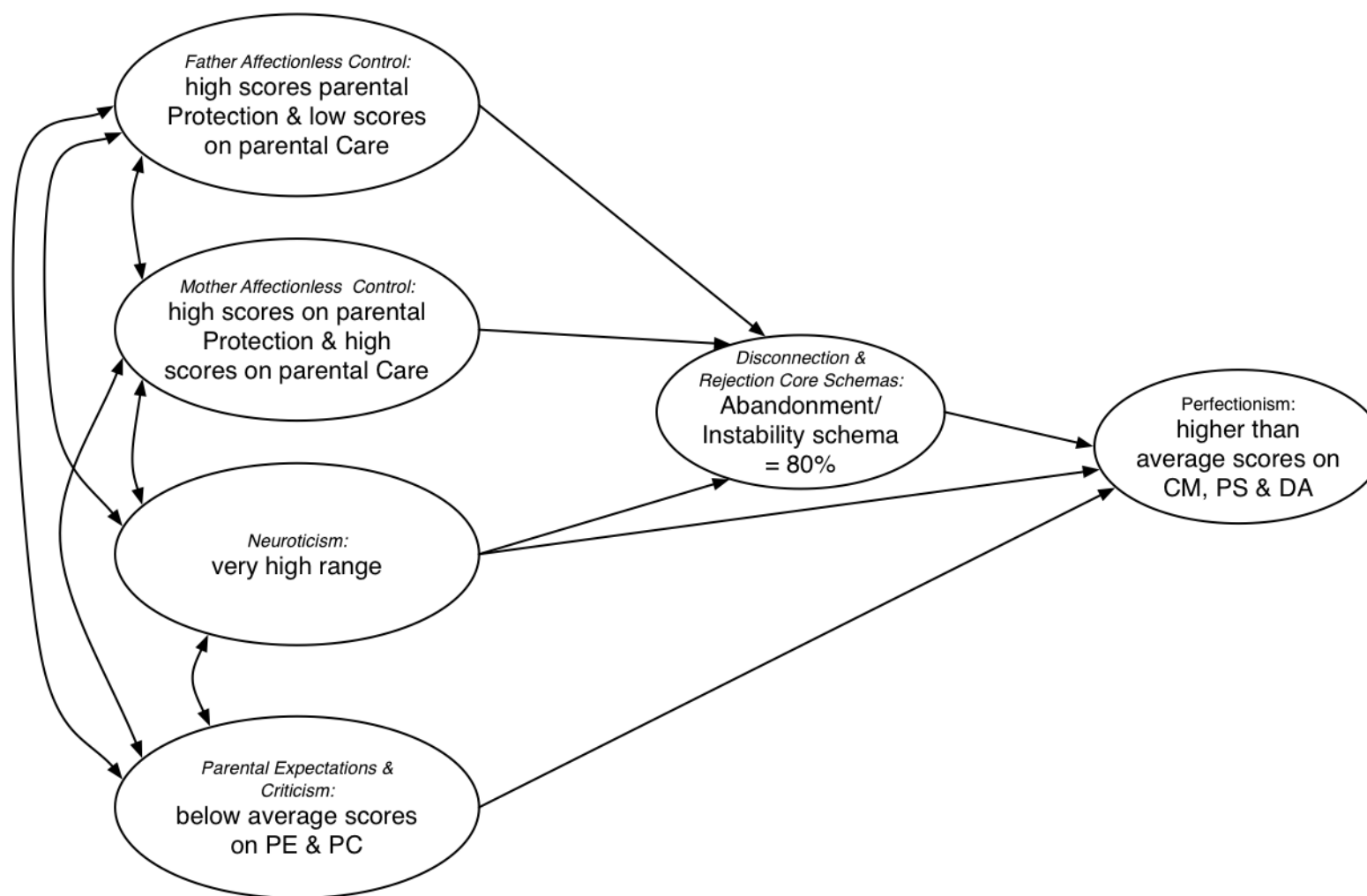


Figure 9. Jane's questionnaire scores in relation to the aetiological model

### 3.4 Discussion

The three case studies highlighted several consistent themes in the clients' perceptions of the main factors that they deemed influential in the development of their perfectionism. Overall, it can be seen from the case studies that all participants expressed insight into the problematic nature of their perfectionism and the link between their past and current psychological problems. All clients also believed that parental bonding was an important factor that contributed to the development of their perfectionism. It was consistently reported that low levels of parental care were received from both parents. More specifically, clients repeatedly mentioned experiencing low parental care factors such as a lack of validation of emotions, lack of understanding, low levels of emotional warmth and a lack of praise. Furthermore, high levels of parental control were also consistently reported in the PBI. Therefore, a parental bonding style classified as Affectionless Control (low care and high control) was identified for four out of the six parents described, with the remaining parenting style for two of the participants' mothers being classified as Affectionate Constraint defined by high levels of parental care and control.

Despite the consistent PBI (Parker et al., 1979) ratings of high levels of parental control, an interesting finding across the three case studies was that none of the clients mentioned high levels of parental control or overprotection as an important factor in their parenting. Another interesting finding across the case studies was that the clients did not believe that their parents expressed high expectations or were critical of their behaviour. Instead, all of the clients consistently referred to observing high levels of perfectionist modeling from both parents. All clients noted a strong tendency towards neuroticism that they recalled being present throughout their life. The clients also commonly referred to a strong familial history of anxiety and depression. Finally, the case studies were also consistent with one another in respect to core beliefs. All participants endorsed 100% of the items on the Unrelenting Standards belief. In addition, all clients strongly endorsed one or more of the core schemas classified in the domain of Disconnection and Rejection schemas, including Abandonment, Defectiveness, Social Isolation, and Mistrust/Abuse. Clients consistently described a history in which they believed they had developed Disconnection and Rejection Core Schemas. The clients consistently cited one of two reasons for the development of these beliefs. Firstly, clients believed they developed perfectionist beliefs and behaviours as a way of trying to gain the emotional needs they felt that had not completely attained from their parents. For example, the clients mentioned continuing to strive for acceptance, love and approval as a way of improving their low self-worth. A second reason that perfectionist beliefs developed was perceived to be as a way of preventing fearful events that were related to their core

schemas, such as trying to prevent expected rejection or abandonment or revealing a self-concept that was defective.

The aim of this study was to examine whether the case studies presented were consistent with the aetiological model of perfectionism proposed in Study One. It appears that the case studies were indeed largely in keeping with the model. The case studies were all consistent in their perceptions that their perfectionism developed in response to a history of parental bonding classified as Affectionless Control, high levels of Neuroticism and that these factors contributed to the subsequent development of Disconnection and Rejection Core Schemas. Therefore, in this respect the case studies in the present study are consistent with the four previous case studies on perfectionistic clients described earlier (Greenburg & Bolger, 2001; Greenspon, 2008; Hirsch & Haywood, 1998; Sorotzkin, 2005). These previous case studies also highlighted client perceptions as to the importance of low parental bonding, a family and patient history of Neuroticism and subsequent development of beliefs pertaining to low self-worth, Defectiveness and Emotional Deprivation. The present findings are also partially consistent with Neumeister's (2004b) qualitative study, in which themes identified that self-oriented perfectionism was perceived as an inborn characteristic and had a strong link with self-worth. Finally, the present case studies are also consistent with quantitative findings that have identified salient factors in the development of perfectionism, including parental bonding characterised as parental Affectionless Control (e.g., Enns et al., 2000; Stoeber, 1998). The participants in the case studies consistently referred to their perfectionism developing as a way of trying to attain acceptance, love and praise from their parents (that was not unconditionally provided). This parental bonding style is consistent with low care and high control, otherwise termed Affectionless Control (Parker et al., 1979).

The participants commonly noted that they experienced a tendency to worry. This is consistent with previous quantitative findings of a strong association between Neuroticism and perfectionism (e.g., Hewitt et al., 1991; Magnusson et al., 1996). In addition, the participants often noted a familial history of neuroticism, which is consistent with previous twin studies that have investigated the familial transmission of perfectionism (e.g., Tozzi et al., 2004; Wade et al., 2008). The present case studies are therefore also in line with prominent cognitive theories that predict a combination of parenting and personality factors combine to form core beliefs pertaining to worth and Unlovability (e.g., A. Beck, 1979; J. Beck, 1995; Young, 1999).

However, an interesting theme of note across all of the case studies was that the clients did not believe that their parents had high expectations of them, or that they received critical parenting. This perception is not in keeping with the aspect of the model proposed in the

present research, which found that high Parental Expectations and Criticisms had a direct relationship with perfectionism. This perception is also inconsistent with the four previous case studies that reported a history of parental criticisms as being perceived to be an important factor in the development of perfectionism (Greenburg & Bolger, 2001; Greenspon, 2008; Hirsch & Haywood; Sorotzkin, 2005). Furthermore, this perception is also contrary to previous quantitative findings that found high Parental Expectations and Parental Criticism to be associated with perfectionism (e.g., Bandura & Dweck, 1999; Chang, 2000; Frost et al., 1991; Kawamura et al., 2002). However, this perception does accord with the qualitative study by Neumeister (2004b), who reported that a consistent theme to emerge for participants high on SOP was parenting styles that were not critical.

There are two possible interpretations of the finding that high Parental Expectations and Parental Criticism were not associated with perfectionism in the current case studies. The first explanation is that this finding is not relevant to the aetiological model as it comes from case studies that might not be generalisable. The limited generalisability of case studies has been noted previously and therefore the current findings need to be interpreted cautiously. A second possible interpretation might be related to parental modeling of perfectionism. All clients reported that they observed both of their parents to model perfectionist behaviour throughout their upbringing. Parental modeling of perfectionism has also been found to be associated with perfectionism in previous quantitative studies (e.g., Chang, 2000; Frost et al., 1991a; Vieth & Trull, 1999). It may have been the case that perfectionist standards developed as the expected norm in each family, and did not require parents to verbalise this behaviour for their children to incorporate these standards into their thinking. Therefore, high expectations may have been modeled, but not necessarily verbalised as strict expectations per se. It may have also been the case that the three clients in the case studies did not receive parental criticisms as they never deviated from perfectionist behaviour.

This suggestion is in keeping with Sorotzkin's (2005) clinical observations that perfectionism can sometimes develop in situations in which there is no overt rejection or criticism but rather a lack of parental care and emotional neglect that results in children developing perfectionism in an attempt to merit their parents' interest and approval. It is hypothesised that in the current cases the clients experienced perfectionism as an internally imposed standard rather than an external expectation. This is speculation, and is clearly an area that warrants further investigation in qualitative studies. Such studies may specially investigate the relationship between parental modeling and the development of perfectionist beliefs. This area could also be investigated using quantitative techniques such as structural equation modeling to examine whether the relationship between perfectionism and the parental modeling of perfectionistic behaviour is mediated by the high self-expectations of



perfectionism.

In regard to the maintaining factors of perfectionism, the themes highlighted in the current case studies provide support for previous research in this area (e.g., Shafran et al., 2003). The clients consistently described patterns of thinking and behaviour that appeared to maintain their perfectionism, including dichotomous thinking, self-critical thinking and avoidance (e.g., Egan et al., 2007; Kobori et al., 2008; Riley & Shafran, 2005). These reports are similar to Riley and Shafran's (2005) qualitative investigation into maintaining mechanisms of perfectionism that identified themes including self-critical reactions to failure, fear-driven behaviour and avoidance. The current case studies are also supportive of previous qualitative research in the area of perfectionism that found themes in clinical participants who reported a high level of distress (Rice et al., 2003) and made negative self-evaluations of being a failure (Egan, 2005) when they did not meet their high personal standards. These current themes of maintaining factors of perfectionism, including dichotomous thinking styles, avoidance and self-critical thinking are also consistent with Shafran et al.'s (2002, 2010) cognitive-behavioural model of maintaining factors of perfectionism.

One finding of particular interest related to the use of downward arrow questioning (Burns, 1980). Clients were asked as to their perceptions of what the worst thing about not being a perfectionist would be. Initially, they reported that they believed they would be a failure, which was consistent with previous research (Egan, 2005). However, when the downward arrow technique was continued to enquire as to what the worst thing about being a failure would mean, the clients reported cognitions that could be interpreted to be consistent with core schemas about being defective, abandoned or socially isolated. These perceptions were consistent with clients' reports on the YSQ-SF (Young, 1998) that endorsed none of the beliefs associated with failure, however Disconnection and Rejection Core Schemas were more strongly endorsed. This finding is also in keeping with J. Beck's (1995) and Young's (1999) models that stated that core beliefs pertaining to worth and Unlovability lead to the development of intermediate beliefs, including perfectionism.

### **3.4.1 Limitations**

There were limitations of the current study that need to be taken into account when considering the results. The obvious limitation is that case studies are descriptive and therefore no generalisations can be made to a wider clinical population, thus transferability is not possible. It is entirely possible that the opinions expressed by the participants may not have been represented by a larger sample of participants. Furthermore, the recruitment procedure of the three participants was conducted through snowball sampling and was not random and thus may have been biased given that the author invited other psychologists to

nominate clients deemed to be perfectionistic to participate in the study. These case studies may therefore only be considered as descriptive, preliminary research that was used to enhance the clinical relevance of the aetiological model depicted in Study One. The use of case study design was subject to bias, as the author interpreted the participants' answers initially. Thus, the author did not have objectivity when interpreting the results and likely may have interpreted the participants' responses in line with the aetiological model. Whilst respondent validation was undertaken by the clinical psychologist of each participant, it is entirely possible due to reflexivity that the research question and the power relationship between the researcher and participant still influenced the research process and indeed the subsequent validation of the transcript by the clinical psychologist. In addition, it is possible that as the participant's completed the questionnaire battery after the interview they may have been primed when answering questions, thus, the results of the participant's test scores need to be interpreted with some caution. A further limitation is the retrospective design used in case studies based on participants past recollection of events (Neumeister, 2004c). The participants' responses were not cross checked with data collected from their parents or observational data, and therefore must be strictly considered as case studies into clients' perceptions of the aetiological factors that contributed to the development of their perfectionism. Finally, all three participants were female and thus further research of this kind is required with male participants. Despite these limitations, the aim of illustrating how the model was able to guide clinical assessment and formulation from the perspective of clinical clients was achieved.

The themes identified in the case studies suggest several areas for future research. As case studies provide preliminary research, it is firstly important to see if these themes are replicable in a qualitative investigation into the aetiological factors using a larger sample. This study would need to be analysed using thematic analysis incorporating inter-rater reliability (Denzin & Lincoln, 2000). Another area of future research is to examine the relationship between parental modeling of perfectionism and the development of core schemas and maintaining cognitions. If a significant direct or indirect relationship is found between perfectionism and parental modeling of perfectionism, then this factor could be incorporated into an aetiological model of perfectionism such as the one developed in the present study and tested in a clinical population.

The case studies also highlight several areas for future clinical intervention. In particular, these case studies may assist in the development of treatments for clients who have not been responsive to interventions that target the maintaining mechanisms of perfectionism. A question for future research is to investigate whether treatment efficacy is improved by developing interventions that additionally target underlying core schemas to their

perfectionism. If clients are able to increase their awareness as to how their parenting and personality factors combined to contribute to the development of their core schemas, then they could be taught to challenge or modify these beliefs. Several interventions could be useful in this regard, including cognitive behavioral therapy techniques to modify beliefs and imagery techniques to express feelings regarding belief development to their parents (e.g., J. Beck, 1995). Furthermore, given the important role of schemas that was highlighted in this research, future studies need to examine the efficacy of treating perfectionism using schema therapy, which focuses on addressing the predisposing factors that contributed to the development of schemas (Young, 1999). Finally, with an insight into the link between their sense of self and their perfectionism, clients could learn to re-define their self-worth according to more healthy personal qualities that are within their control (e.g., Riley et al., 2007).

In summary, the three case studies provide preliminary evidence of the clinical relevance of the aetiological model of perfectionism proposed in Study One. Consistent with previous quantitative and qualitative research, it was found that the three participants perceived parental Affectionless Control and neuroticism as important factors that contributed to the development of Disconnection and Rejection Core Schemas, which in turn contributed to the development of perfectionism. The case studies yielded an interesting finding that parental modeling of perfectionism was also viewed as an important aetiological factor, and may explain why clients did not consider high parental expectations and criticisms to have contributed to their perfectionism. Future research is required to investigate these findings in a qualitative study with a larger sample, and to investigate the relationship between parental modeling of perfectionism, core beliefs and perfectionism. Future research also needs to examine the efficacy of developing clinical interventions that raise client awareness of the link between their parenting, personality and core schemas, such that their contingent perfectionist beliefs may be challenged accordingly.

## **CHAPTER 4: GENERAL DISCUSSION**

This research represents the first of its kind to test direct and indirect relationships between salient aetiological factors in an evidence-based model of perfectionism in a large clinical sample. This research provided unique insights into the mediating role of core schemas in this area, which had not previously been investigated. Furthermore, this research is the first to examine aetiological factors of perfectionism through the use of case studies to assess the clinical applicability of the model.

This discussion will focus on the main findings of the research in regard to the conceptualisation of perfectionism. Many of the salient findings in this research have already been discussed in relation to previous research, including findings pertaining to perfectionism models and each of the individual salient factors examined in the model. Therefore, this discussion will focus more specifically on the inter-relationships between these factors in the context of an aetiological model. Clinical implications of the results in this research will be discussed, and examples of psychological interventions that target the aetiological factors will be outlined. Finally, this chapter will conclude with a discussion of the methodological limitations of this research, and with recommendations for future research.

One of the overall aims of this research was to enhance knowledge regarding the construct of perfectionism. The findings from Study One highlighted the importance of understanding the complex relationships between three factors that served to form an aetiological model of perfectionism. It was found that high Parental Expectations and Criticisms had a direct relationship with Perfectionism. It was also found that Disconnection and Rejection Core Schemas mediated the relationship between parental Affectionless Control and Perfectionism. Finally, it was found that Neuroticism had both a direct and an indirect relationship, via Disconnection and Rejection Core Schemas, with Perfectionism. The series of case descriptions presented in Study Two highlighted client's perceptions as to the aetiological factors that contributed to their perfectionism. These perceptions were largely consistent with the proposed aetiological model of perfectionism, and included experiencing a familial history of psychological distress and neuroticism, as well as a parenting style that was most commonly described by low levels of care and high levels of protection. The participants described that as a result of these parenting and personality factors, core schemas developed in the form of continuing to strive for unmet emotional needs or to avoid expected parental rejection or abandonment. In contrast to the aetiological model, participants in Study Two did not report that high parental expectations and criticisms influenced the development of their perfectionism, and instead cited the relevance of parental modeling.

The present research made some unique contributions to the literature with regard to developing and testing an aetiological model of perfectionism. Moreover, in contrast to previous research that had examined aetiological factors of perfectionism separately, this was the first study to explore how these factors relate to each other in the form of an aetiological model. Knowledge of the aetiological factors associated with perfectionism is important to further inform the subsequent definition and measurement of the construct, which has predominantly focused only on the maintaining mechanisms of the construct.

#### **4.1 The Construct and Measurement of Perfectionism**

Due to the lack of theoretical models in the area of perfectionism, definitions and treatment have largely been based on the measurement of the construct (e.g., Frost et al., 1990; Shafran et al., 2002). This is different to other psychological constructs that usually rely on the development and testing of theoretical models to inform the measurement and treatment approaches (e.g., Barlow, 2002; Cooper et al., 2004). Therefore, many of the resulting definitions, measurements and treatments of perfectionism have focused exclusively on the maintaining mechanisms that have been found to be associated with the construct. For example, in their definitions of perfectionism, Shafran et al. (2002) focus on the maintaining mechanisms of perfectionism, such as making critical self-evaluations on the basis of having excessively high standards. However, it appears that the maintaining mechanisms of perfectionism only form part of the construct, as is evident from the findings of this research and several previous studies into aetiological factors of perfectionism (e.g., DiBartolo et al., 2008; Enns et al., 2000; Magnusson et al., 1996). Therefore, further discussion and refinement of the definition of perfectionism is required based on aetiological and maintenance models of perfectionism rather than measurements of the construct.

The development of an aetiological model of perfectionism may also have implications in relation to the area of measurement. The current consensus in the literature is that the measurement of perfectionism is best conceptualised and measured as a multidimensional construct (e.g., Frost et al., 1990; Hewitt & Flett, 1991). There has been debate as to whether the multidimensional view and measurement of perfectionism is going beyond the historical view of perfectionism as a self-focused unidimensional construct (e.g., Burns, 1980; Shafran et al., 2003). The self-focused notion of perfectionism is based on the contention that it is a maintaining mechanism in several psychological disorders that does not require interpersonal aspects of the construct to be taken into account (Shafran et al., 2003). Based on this contention, Shafran and colleagues (2003) have argued that clinical perfectionism should be studied and measured solely from a self-oriented perspective and should not focus on SPP or OOP which assess different dimensions of perfectionism. This definition is in line with

Shafran and colleague's (2002) model of maintaining mechanisms of clinical perfectionism. However, based on the findings of the present research, it would appear that even if the definition of perfectionism were based only on the clinically relevant, self-oriented dimensions of the construct, then the initial assessment would still need to include a measurement of aetiological factors in addition to a measurement of maintenance mechanisms, as these factors are relevant for the development of self-focused perfectionism. As aetiological factors such as parental bonding will of course remain the same over treatment, only particular measures that are sensitive to change over the course of treatment would need to be re-administered.

Therefore, the findings of the present research have two important implications for the measurement of perfectionism in treatment. Perfectionism, when viewed as a multidimensional construct, is measured by examining a variety of dimensions (e.g., FMPS; Frost et al., 1990). Taking the FMPS as an example, in addition to measuring several dimensions of perfectionism, this measure also includes two subscales designed to assess aetiological factors of perfectionism: PE and PC. If the multidimensional view of the construct is to progress, then it may be necessary to extend existing multidimensional scales to include measures of the aetiological factors found to be associated with perfectionism in the present research. As parental Affectionless Control and Parental Expectations and Criticisms would not be expected to change throughout the course of treatment then these dimensions would only need to be measured at initial assessment. However, the remaining subscales of the FMPS (PS, CM, DA & O), as well as additional measures of core schemas and Neuroticism would be expected to change over the course of treatment and thus could be repeatedly administered. Alternatively, the package of questionnaires used in Study One could be administered at initial assessment, and only the questionnaires and subscales that are sensitive to clinical change would need to be re-administered throughout treatment.

If the unidimensional measurement of perfectionism is to further progress using measurement tools such as the CPQ (Fairburn et al., in preparation, cited in Riley et al., 2007), then it may be necessary to also have a separate measure of perfectionism to assess some of the aetiological factors that contribute to the development of self-focused perfectionism. Shafran et al. (2003) and Rheaume et al. (1995) state that when measuring self-oriented perfectionism, parenting subscales should be excluded from a total perfectionism score, as they are possible confounding factors. However, it may be relevant to include measures of schemas related to a person's self-concept that are identified as being important in the measurement of perfectionism. Therefore, it may be the case that the CPQ is used to repeatedly measure the maintaining mechanisms of perfectionism that are expected to change over the course of treatment and a separate aetiological perfectionism scale is also developed

to measure Disconnection and Rejection Core Schemas, parental Affectionless Control, Parental Expectations and Criticism, parental modeling and Neuroticism. Only the Neuroticism and core schema subscales that are sensitive to clinical change would need to be re-administered through treatment.

Overall, it is clear that if the models of perfectionism were accepted to include aetiological as well as the existing maintaining mechanisms of perfectionism, then the definition, measurement and treatment of the construct would need to be modified accordingly. Therefore, an area of focus in future research needs to work on the development and testing of measurement tools that incorporate both aetiological factors (on initial assessment) and maintaining mechanisms. The suggestion of testing the efficacy of treating aetiological factors of perfectionism will be discussed in more detail in the clinical implications section of this chapter.

## **4.2 Aetiological pathways to perfectionism**

The main aim of the present research was to develop and test an aetiological model of perfectionism. This aim was achieved in Study One and the findings increased the knowledge of the inter-relationships between these factors that contribute to the development of the construct. These findings highlighted the importance of considering that there may be different aetiological pathways to perfectionism. These pathways will now be discussed in more detail.

### **4.2.1 Parenting Factors and Cognitive Pathways to Perfectionism**

It was hypothesised that parental Affectionless Control and high Parental Expectations and Criticism would have both a direct relationship and an indirect relationship, mediated via Disconnection and Rejection Core Schemas, with Perfectionism. In Study One it was found that the two parenting factors appeared to have different relationships with Perfectionism. High Parental Expectations and Criticism appeared to have a direct, but not an indirect, relationship with Perfectionism. In contrast, there was only an indirect relationship observed between parental Affectionless Control and Perfectionism, which appeared to be mediated by Disconnection and Rejection Core Schemas. One explanation of these findings is simply that as the trend approached significance for the cognitive pathway that represented an indirect relationship between Parental Expectations and Criticism and Perfectionism that was mediated by schemas may have been statistically significant in a larger sample. An alternative explanation for a direct significant relationship between Parental Expectations and Criticisms and Perfectionism is that different types of parenting behaviour may result in

Perfectionism via different cognitive pathways. This suggestion is consistent with the conclusion made by Shah and Waller (2000) that vulnerabilities to depression may result from different cognitive routes resulting from different forms of parenting behaviour. They reported that parental criticism and perfectionism appeared to result in the development of dysfunctional attitudes, whereas, maternal overprotection and poor parental care seemed to result in core schemas that mediated the relationship with depression. Shah and Waller's findings in relation to the development of depression are similar to the present findings with respect to the development of perfectionism. Therefore it appears that high Parental Expectations and Criticisms appeared to result in the development of Perfectionism cognitions, whereas low parental care and high control appeared to result in the development of Disconnection and Rejection Core Schemas that mediated the relationship with Perfectionism.

The finding of a direct relationship between high Parental Expectations and Criticism and Perfectionism in Study One in the present research is consistent with previous research. Frost and colleagues (1991) reported that perfectionism in daughters was associated with perceived harshness of their fathers. Similarly, authoritarian styles of parenting have been found to be associated with maladaptive perfectionism (Kawamura et al., 2002). This finding is also consistent with previous case studies that reported a history of parental criticisms to be important in the development of perfectionism (Greenburg & Bolger, 2001; Greenspon, 2008; Hirsch & Haywood, 1998; Sorotzkin, 2005). Interestingly, in Study Two, it was consistently reported that in contrast to the previous research, the three clients who were interviewed did not believe that they received parenting that was characterised by high expectations or criticisms, and instead cited parental modeling of perfectionism to be an important factor in the development of their own perfectionism. This theme in the present research was consistent with a previous qualitative study conducted by Neumeister (2004b), in which gifted college students who scored highly on SOP reported that they did not have a history of critical parenting. Furthermore, the finding of a strong association between parental modeling of high standards and development of perfectionism has also been reported in previous studies (e.g., Chang, 2000; Frost et al., 1991a; Vieth & Trull, 1999) and is consistent with the social learning model referred to by Flett et al. (2002).

The difference in findings between the quantitative and descriptive findings regarding Parental Expectations and Criticisms may be inconsequential, as the case studies cannot be generalised. However, these preliminary findings highlight the importance of studying the different cognitive pathways between parenting factors and perfectionism. It is possible that high Parental Expectations and Criticisms are explicit statements and therefore lead directly and consciously to the development of perfectionist cognitions and behaviours. In contrast,



the cognitive pathway between parental Affectionless Control and Perfectionism may require the development of Disconnection and Rejection Core Schemas, as this is a more complex non-verbal and implicit process that requires subjective interpretations or beliefs to be formed. These cognitive pathways could be understood further through qualitative research that specifically investigates perceptions regarding the cognitions and schemas that developed as a result from Parental Expectations and Criticisms versus parental Affectionless Control respectively.

The notion of a lack of parental bonding, or parental Affectionless Control, resulting in the formation of maladaptive schemas that result in the development of contingent beliefs is consistent with prominent cognitive theories advanced by J. Beck (1995), Young (1999) and Cooper et al. (2004). The finding that core schemas mediate relationships between parental bonding and psychological distress is consistent with previous research (Jones et al., 2005; Meyer & Gillings, 2004; Murray et al., 2000; Shah & Waller, 2000; Turner et al., 2004). Meyer and Gillings (2004) and Murray et al. (2000) found that schemas of Mistrust/Abuse and beliefs pertaining to internalised shame have been found to partially mediate the relationship between parental overprotection and bulimic cognitions in clinical and non-clinical samples respectively. In addition, Turner et al. (2004) found that schemas of Defectiveness/Shame and Dependence/Incompetence mediated the relationship between parental bonding and eating disorder symptoms. Similarly, Jones and colleagues (2005) found that the predictive relationship between paternal rejection and eating psychopathology was moderated by schemas of Social Isolation, Self-Sacrifice and Vulnerability to Harm. Finally, Shah and Waller (2000) found that the relationship between maternal bonding and paternal overprotection and depressive psychopathology was mediated by five schemas including, Failure to Achieve, Vulnerability to Harm, Dependence/Incompetence, Emotional Inhibition and Unrelenting Standards.

Taken collectively, the results of the present research on perfectionism and the previous research investigating the mediating role of schemas in eating disorder symptomology and depression provide further support for these prominent cognitive models (A. Beck, 1979; J. Beck, 1995; Cooper et al., 2004; Young, 1999) which assert that early life events, such as a lack of parental bonding contribute to the development of maladaptive core schemas or beliefs that contribute to the development of specific psychological vulnerabilities. However, this research was the first to directly examine the mediating role of schemas between parenting factors and perfectionism. Moreover, this research was the first study to examine the relationship between both parenting and personality factors and the mediating role of core schema in the development of a specific psychological vulnerability. Further research is required to investigate the interaction between parenting, Neuroticism and core schemas in a

range of specific psychological issues and disorders.

Overall, it appears that there two distinct cognitive pathways that may be important in understanding the importance of parental aetiological factors in the development of perfectionism. High Parental Expectations and Criticisms may lead directly to the formation of perfectionist cognitions and behaviours. In contrast, low parental Care and high parental Protection may result in the development of maladaptive Disconnection and Rejection Core Schemas that then result in the contingent development of Perfectionism. This is clearly an area that requires further research. Future studies need to extend the present research by adding in a measure of parental modeling to the existing factors in the model and then use structural equation modeling to examine the inter-relationships between these variables. It would be useful to do this both in a mixed clinical sample like the present research to maximise the generalisability of the model. It would also be important to perform this research in disorder-specific populations known to be highly perfectionist such as in OCD and eating disorders so that any differences in the interactions between the factors can be examined. Understanding how different experiences of parenting, personality and subsequent cognitive pathways contribute to the development of psychological disorders is important to guide theoretical models that can in turn inform assessments, measurements and treatments.

#### **4.2.2 Personality Factors and Cognitive Pathways to Perfectionism**

The findings in Study One indicated that Neuroticism has both a direct relationship with Perfectionism as well as an indirect relationship that was mediated by Disconnection and Rejection Core Schemas. The strong association between Neuroticism and Perfectionism was not surprising and was consistent with the findings in the previous literature (Dunkley et al., 1997, 2004; 2006; Hill et al., 1997; Magnusson et al., 1996; Rice et al., 2007; Stumpf & Parker, 2000; Zuroff, 1994). However, previous research used a correlational design whereas this was the first known study to provide evidence that Neuroticism may play an aetiological role in the development of Perfectionism using structural equation modeling. The evidence that Neuroticism may be an aetiological factor in the development of Perfectionism is important as this may indicate that there is a generalised vulnerability to negative affect, measured by Neuroticism, which contributes to the development of the construct.

Neuroticism is thought to be a similar concept to negative affect, given that Costa and McCrae (1992) define Neuroticism as the degree to which people are vulnerable to experiencing negative thoughts, emotions and behaviours (Egan, 2005). Therefore, the finding of a precursory vulnerability to Neuroticism in the development of perfectionism appears to provide support for many prominent cognitive theories that have highlighted the importance of a generalised vulnerability to negative affect that interacts with parenting factors in the development of specific psychological issues and disorders (e.g., A. Beck,

1979; J. Beck, 1995; Cooper et al., 2004; Young, 1999). The present finding of the importance of both Neuroticism and parenting factors in the development of Perfectionism also provides support for Barlow's (2002) triple vulnerability model for the development of anxiety disorders, which contends that generalised biological vulnerability combines with early life experiences to result in a psychological vulnerability to develop anxiety and other emotional disorders.

The findings from this research suggest that there are two pathways involving Neuroticism that may be of importance in the aetiological development of perfectionism. It appears that whilst Neuroticism is clearly an important individual factor in the development of the construct, there is also a complex interplay between Neuroticism, parenting, and core schemas that highlights that perfectionism may not be just a manifestation of a biological generalised vulnerability. This finding is consistent with previous research that investigated perfectionism in twin studies and concluded that a genetic component was likely to account for a percentage of the development of the construct. For instance, Tozzi et al. (2004) performed a path analysis with monozygotic and dizygotic twins and found that CM and high PS shared some common genetic effects. Similarly, Wade et al. (2008) found that in a large sample of twins, a higher level of perfectionism was a co-morbid trait with anorexia nervosa. Thus, it appears that despite having a strong biological predisposition to neuroticism or negative affect, knowledge of parenting and core schemas is also important in the development of more specific psychological constructs such as perfectionism.

Moreover, an important area of future research is to investigate the mediating factors in the relationship between neuroticism and a wide range of psychological issues and disorders. Given that it has previously been concluded that 30-50 percent of the variance in anxious apprehension is accounted for by genetic contributions (Chorpita & Barlow, 1998), it is important to investigate the other variables that constitute the remaining variance. This research would enhance understanding of the aetiological factors that contribute to different psychological constructs. This could in turn guide psychological assessment, case formulation and treatment planning. This research could be performed using a longitudinal prospective twin study design that investigates the amount of shared variance for neuroticism, parenting factors and schemas in a clinical population. Furthermore, designs using structural equation modeling to investigate the direct and mediating relationships between neuroticism and a range of psychological constructs are also important. Investigating whether neuroticism has a unique relationship with other psychological constructs or a relationship mediated by other variables, such as schemas, is important to enhance knowledge of each psychological construct. Understanding the relative importance of each factor and the relationships between these factors will also provide further information as to whether interventions that directly

target a single factor, such as neuroticism, are beneficial to develop and test. Alternatively, if there is clear evidence for mediating relationships between neuroticism and psychological constructs, then it may be worthwhile to develop and test the efficacy of interventions designed to target mediating factors such as parenting styles or schemas. This could be achieved by designing a preventative program to intervene with parents and children by providing psychological education regarding how parental styles impact the development of core schemas and how to modify parenting styles to prevent perfectionism from occurring. For example, parents could be taught to express realistic and achievable expectations to their children that are not contingent on provision of love and acceptance. Longitudinal research would be required to assess the efficacy of a randomised trial that compares the levels of perfectionism and psychological distress on children who received the prevention program compared to a wait list control group at different intervals throughout childhood, adolescence and adulthood.

### **4.3 Clinical Implications of the Results**

The clinical implications of the results will be explored by an initial discussion of general psychological assessment and treatment issues in relation to perfectionism. Following this discussion, specific interventions will be proposed on the basis of findings in the current research program, which may be helpful in targeting the aetiological factors in perfectionism.

It has been argued throughout this research that when working with clients experiencing high levels of perfectionism, aetiological factors as well as maintaining mechanisms need to be taken into account. This is clearly of relevance when clinicians are undertaking psychological assessments and developing case formulations. However, the importance of considering aetiological factors also leads to an important empirical research question: Are psychological interventions that target aetiological factors, as well as maintenance factors, more effective in treating perfectionism than interventions that solely target maintaining mechanisms of the construct? Several authors have noted the importance of developing psychological interventions that target the developmental origins of perfectionism. For example, Cooper et al. (2004) suggest that the implications from their cognitive model of bulimia nervosa are that “both maintenance processes and developmental factors will need to be addressed in the individual case” (p.12) of treatment of clients with bulimia nervosa. Similarly, Waller et al. (2002) emphasised the importance of treating underlying core schemas in addition to cognitions and assumptions “the treatment of bulimic eating disorders may depend on addressing unconditional core beliefs (such as beliefs that emotions are not acceptable), as well as cognitions and attitudes that have a more immediate link to the eating disorders...such as....perfectionism.” (p.177). Furthermore, Jones et al. (2005) also

concluded that their findings regarding the importance of the relationship between core schemas, parental bonding and perfectionism are “clinically useful in identifying targets for treatment” (p.362). Finally, Glover et al. (2007) and Hewitt et al. (2003) recommended that perfectionism treatments needed to include additional factors beyond just maintaining mechanisms if they are to produce long lasting change.

If psychological treatments for perfectionism were to include interventions to target maintaining and aetiological factors, then it would be logical to first look towards established CBT treatments that have been found to have some efficacy with treating the maintenance mechanisms of the construct. As Shafran et al. (2004) stated “It is clearly better only to introduce a novel treatment after the failure of an evidence-based one” (p.356). Glover et al. (2007) and Egan and Hine (2008) provided case series evaluations for CBT treatment of clients with issues of perfectionism. Glover et al. reported improvements in perfectionism for six out of nine clients and Egan and Hine reported improvements in perfectionism for two out of four participants. Fairburn and colleagues (2009) have also found significant improvements in eating disordered behaviour when transdiagnostic CBT for eating disorders was used. In a randomised trial using CBT for perfectionism, Riley et al. (2007) found that 75 percent of patients diagnosed with an Axis 1 disorder showed improvements in perfectionism. In contrast, Steele and Wade (2008) also compared CBT for perfectionism, with standard CBT for bulimia nervosa and a placebo intervention, including a form of mindfulness. However, they found no significant differences between the groups in patients with bulimia nervosa or eating disorders not otherwise specified. In their study, Steele and Wade noted that CBT for perfectionism did result in significant decreases in large effect sizes in bulimic behaviours, anxiety and depression. Unfortunately, at six-month follow-up only 19 percent of the patients who completed treatment showed abstinence of both weight control behaviours and binge eating episodes. Overall, it is evident that targeting the maintaining mechanisms of perfectionism through CBT is a logical initial treatment. However, it is clear that not all of the participants in the CBT treatments that targeted maintaining mechanisms showed an improvement. That is, between 25 to 50 percent of participants showed no significant improvement in perfectionism in the CBT treatment studies. Furthermore, maintenance of treatment gains for anxiety and depression in CBT treatment of perfectionism has proven to be difficult (e.g., Egan & Hine, 2008; Riley et al., 2007; Steele & Wade, 2008). Whilst these findings are similar to the average of 40 percent of patients who are classified as being treatment non-responsive in CBT studies of disorder-specific treatments (e.g., Dobson & Dobson, 2009), it highlights that future research could examine if additional interventions may be required to provide effective treatment to patients under these circumstances. Therefore, for patients with complex psychological histories who have not responded well to interventions that have targeted the maintaining mechanism of perfectionism, it is important

to assess the efficacy of extending this treatment to target aetiological factors.

Further research needs to investigate the efficacy of comparing psychological treatments for perfectionism that target maintenance mechanisms versus an extended treatment that also targets aetiological factors. This would be an important area of research for clients who have not responded well to an initial CBT program. These interventions would be intended to extend rather than replace CBT treatments that target maintenance factors. Following on from the results of the present research, it would appear that parenting, neuroticism and mediating core schemas may be important aetiological factors to focus on when developing psychological interventions that target complex issues of perfectionism, which may in turn improve negative affect scores. With respect to parenting interventions, this is in line with suggestions from previous authors. For example, Jones et al. (2005) suggested that individuals with eating disorders reporting a history of parental rejection and development of associated schemas “are likely to benefit from family therapy or therapy that focuses on exploring the perceived [parent-child relationship]” p. 362. Similarly, Shah and Waller (2000) concluded that “clinical work with adults with major depression might need to take account of parental style....where parents are reported to be uncaring or overprotective, cognitive-behavioural therapy might need to include a schema-focused component” (p. 19).

When examining the differences between cognitions and schemas, Shah and Waller (2000) concluded that different forms of parental behaviour appeared to result in depression via different cognitive pathways. They stated that parental criticism and modeling appeared to contribute to developing dysfunctional assumptions (Randolph & Dykman, 1998). In contrast, parental Affectionless Control appeared to result in the development of maladaptive core schemas in depressed patients. These findings are consistent with those in the present research and have implications for psychological interventions. It may be that when a history of parental Affectionless Control and/or Disconnection and Rejection Core Schemas are identified, therapy may need to incorporate a schema-focused component with a specific focus on parenting. In contrast when schemas or parental Affectionless Control are not evident, then it appears that dysfunctional assumptions may be best targeted through CBT that addresses maintenance mechanisms, as a schema component may not be warranted.

In keeping with the quantitative literature, case studies from a variety of psychological orientations have reported improvements in perfectionism by focusing on the link between parenting and the construct (e.g., Fredtoft et al., 1996; Greenburg & Bolger, 2001; Sorotzkin, 1998). These interventions described focusing on increasing the clients’ awareness of the link between their perceived parenting and development of perfectionism, and the exploration and expression of emotions regarding this awareness. The importance of the therapeutic

relationship in these case studies was emphasised with a particular focus on validation of emotions given the absence of this parental experience during childhood. However, to date there is no empirical data on these interventions and thus an important question for future research is to examine whether these interventions enhance the efficacy of treatment outcome when compared to a wait list control group and alternative forms of therapy, such as CBT.

A growing number of authors have also concluded that treatment of issues involving perfectionism should include a specific focus on core beliefs. Cooper et al. (2004) concluded that “beliefs involved in the development of the disorder might be usefully tackled with standardised techniques, including both verbal restructuring and behavioural experiments...and by schema-focused techniques (particularly relevant to core beliefs and schema-driven processes)” (p.12). Cooper and colleagues suggested that using schema therapy techniques such as cognitive continua, positive data logs and imagery may be useful to include in psychological interventions that target perfectionism. In a recent review of the empirical literature on evidence-based treatments, Dobson and Dobson (2009) concluded that the evidence for Young’s schema therapy (1999) was relatively weak in areas other than in treating borderline personality disorder (e.g., Giesen-Bloo, van Dyck et al., 2006). The use of schema therapy had not been supported in clinical trials in the treatment of depression (Jacobson et al., 1996) or in preventing relapse in depression (e.g., Dimidjian et al., 2006). Dobson and Dobson reported that further research was required to examine the efficacy of schema therapy as to date the support for schema therapy was based on anecdotal evidence and uncontrolled trials. Nevertheless, Dobson and Dobson concluded that the YSQ-SF (Young, 1998) had good psychometric properties, and emphasised the importance of treating schemas. It was suggested that schemas should be treated using alternative evidence based treatments outlined in Table 23 until further empirical support for schema therapy is obtained.

Table 23

*Description of schema change methods (Dobson & Dobson, 2009)*

Recognising continua	Identify the key emotional or behavioural markers of a schema and try to change these rather than overall schema. e.g., changing mind-reading rather than a mistrust schema to facilitate schema change over time
Positive data logs	Identify key markers of the new desired schema and encourage client to notice and record evidence that supports development of the new schema.
Evidence for old and new schemas	An extension of the positive data logs used as the schema is starting to change. Evidence is recording to support existence and effects of old and new schemas to highlight times that the new schema is becoming stronger and more credible.
Therapy role plays	Using the therapy relationship to practice acting in accordance with new schema beliefs and resulting behaviour changes. Required skills, such as communication training, can be taught and practiced.
Therapy 'confrontation'	Therapist discussing with the client how their schema is affecting the therapeutic relationship. Changes in the client that are consistent with development of the new schema are also highlighted in the therapy relationship.
Behavioural Assignments	Planned experiments between therapist and client to encourage behavioural change that challenges the old schema or supports the new schema.
Imagining new self	Using imagery to identify and articulate the new self as clearly and vividly as possible.
Soliciting social support and consensus	Encouraging clients to obtain opinions and reactions from others regarding their intended changes. Assisting the client to plan what they want to reveal to other people and plan for expected responses.
Discussing advantages and disadvantages (short & long term) of old and new schemas	Assisting the client to review short and long term disadvantages and advantages of schema to enhance motivation to change.



Therefore, it be seen that a growing number of authors suggest that incorporating interventions that target aetiological factors, including parental factors and mediating core schemas, is important in a wide range of psychological issues including perfectionism. In addition to the evidence based schema change techniques, recent studies have also demonstrated the efficacy of using memory-rescripting techniques in assisting people to decrease negative emotions associated with unpleasant memories (e.g., Wild, Hackmann, & Clark, 2008). Wild and colleagues (2008) found that an intervention for patients with social phobia that used cognitive restructuring followed by an imagery rescripting procedure on past unpleasant memories to update and contextualise the memories resulted in significant improvements in reducing memory and image distress and vividness, fear of negative evaluation, negative beliefs and anxiety in feared social situations. As many studies have identified an association between social phobia and perfectionism (e.g., Antony et al., 1998; Juster et al., 1996), it would be useful to investigate the efficacy of using the memory rescripting intervention as an adjunct to target aetiological factors of perfectionism. This could be achieved by applying memory rescripting to unpleasant memories pertaining to parenting experiences that the client has linked to the development of their perfectionism. Beck, Freeman and Davis (2004) also advocate the use of reliving childhood experiences through the use of imagery and role playing so that the situation and associated affect can be 'recreated' and cognitive structuring can be applied to the memory. Beck and colleagues recommend the use of these techniques for modifying long standing schemas, such as those associated with personality disorders, therefore the efficacy of using of these techniques with aetiological factors of perfectionism needs to be investigated given the consistent association found between perfectionism and personality disorders (e.g., Hewitt & Flett, 1991b; Iketani et al., 2002).

Whilst many studies have demonstrated the efficacy of targeting aetiological factors across psychological disorders using a range of techniques, to date, there have been no published controlled trails that have examined the efficacy of the treatment of perfectionism using a treatment program that targets both maintenance mechanisms and aetiological factors. An example of a proposed treatment program to target perfectionism based on the suggestions is outlined in Table 24. It is important to note that whilst it is common practice in psychological therapy to target presenting symptoms of psychological disorders as well as any pertinent aetiological factors, as yet no previous research has investigated the treatment of aetiological factors of perfectionism. Thus, this treatment plan is speculative and requires further research to examine the efficacy of such an intervention.

Table 24

*A proposed tiered treatment program to target maintaining and aetiological factors of perfectionism*

<p><b>Psychological assessment:</b> As part of an initial assessment, if perfectionism is identified as an issue, include questions on development of perfectionism used in the qualitative interview outlined in Table 21. Ask client to complete questionnaire package used in Study One.</p>
<p><b>Symptom management:</b> Target symptoms of specific disorders that require immediate attention. For example, if OCD is identified, provide exposure-response prevention strategies as recommended by evidence-based treatment (e.g., Rees, 2009).</p>
<p><b>CBT for perfectionism:</b> If perfectionism and psychological distress has not improved through symptom management, provide transdiagnostic CBT. Shafran et al. (2010) provide detailed information on techniques to treat the maintaining mechanisms of perfectionism, including discussing the case formulation and identifying perfectionism as a problem; teaching CBT to assist the client to recognise and challenge personal standards, cognitive biases and self-criticism that maintain perfectionism; broadening the patient's scheme for self-evaluation and using behavioural experiments to test competing hypotheses.</p>
<p><b>Aetiological factors:</b> If perfectionism and psychological distress remain problematic after transdiagnostic CBT, discuss the option of exploring underlying aetiological factors with the patient. The case formulation, including aetiological factors and maintenance mechanisms, could be discussed and developed between the client and therapist. Particular focus needs to be given to exploring the link between their parenting and personality factors, subsequent development of core schemas, development of perfectionism as a coping strategy/or intermediate belief and associated symptoms or patterns in their life. Depending on continuing psychological assessment and client preference, the most salient aetiological factors can be targeted by a variety of schema change processes depicted in Table 1, memory rescripting interventions (e.g., Wild et al., 2008) and role-playing memories of parent-child interactions with cognitive restructuring (e.g., Beck et al., 2004). Careful attention must be paid to the therapeutic relationship during this stage of treatment, with a specific focus on validation of emotions and using the therapeutic relationship as a vehicle for change by highlighting when the client is being concerned about completing tasks perfectly and reinforcing change of perfectionist behaviour both in-session and in patient reports of schema changes that occurred outside of the session.</p>
<p><b>Treatment completion:</b> Tapering down of sessions to facilitate independent application of psychological strategies, and follow up sessions to ensure maintenance of psychological strategies.</p>

An example of how this treatment program could be applied will be discussed in reference to treating Anne, whose case study was described in detail in Study Two. Following on from the psychological assessment and completion of the questionnaire battery, Anne could be provided with symptom management strategies as relevant. For example, as Anne described experiencing panic disorder, she would firstly be given psycho-education regarding the

anxiety cycle and anxiety management strategies. Anne may also commence a graded exposure hierarchy to situations associated with her agoraphobia.

The focus of therapy could then move to providing CBT for perfectionism to assist her to manage her binge eating, as well as providing further assistance with her anxiety and depression. Anne could discuss her case formulation with her therapist to assist in increasing her awareness between her perfectionism and the maintaining mechanisms. Anne could be then be taught CBT self-monitoring strategies that could assist her to identify and challenge dichotomous thoughts such as “it would kind of be like the end of the world, of like as I knew it” in the event of not being perfect at home or work. Anne could also be provided with pie-chart techniques to assist her in broadening her self-evaluation of her concept of self worth that is linked with perfectionism by focusing on other attributes that make her worthwhile. Finally, behavioural experiments to address dichotomous thinking could be conducted, an example of which is depicted in Table 25. Behavioural experiments are used in cognitive therapy to elicit change by engaging in a planned activity designed to assess the validity of the patient’s beliefs and or develop and test more healthy alternative beliefs (Bennett-Levy, Westbrook et al., 2004).

Table 25

*A behavioural experiment for changing dichotomous thinking in perfectionism*

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**Unhelpful target cognition:** “If I make a mistake, everyone will know and will think I can’t do my job properly.”

**Helpful alternative cognition:** “If I make a mistake, I will feel uncomfortable for a while, however only some people may notice and question my ability”

**Prediction:** Everyone in the office will notice if I make a mistake and laugh at me, my boss will criticise me and no one will come to me for advice anymore”

**Experiment:** Send an email to colleagues containing a spelling mistake. Make a note of all comments received and resultant office behaviour.

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Through using a behavioural experiment to challenge Anne’s dichotomous thinking, it is anticipated that the degree of belief in her cognitions would decrease following an outcome that is not consistent with her predictions. For example, if Anne is able to note that her boss and colleagues did not comment on her spelling mistake and her colleagues continued to ask for her advice then the dichotomy of her cognitions can slowly be challenged. This behavioural experiment can be followed by other similar experiments that may be of assistance with her social anxiety, such as dressing to a lower standard than she would like on her next social gathering and observing what happens.

If Anne reported that her perfectionism and psychological distress remained unchanged

following transdiagnostic CBT, it may be useful to target aetiological factors. If Anne wanted to proceed with this work, after being informed of the potential advantages and disadvantages of examining underlying factors (Dobson & Dobson, 2009), then the case formulation could be discussed and developed between the client and psychologist. For Anne, it would firstly be important to explore her experience of parental Affectionless Control and high Parental Expectations. The impact of experiencing this parenting style with a history of high levels of Neuroticism could then be discussed. The development of her schema pertaining to Abandonment/Rejection could be explored in relation to her parenting and personality factors. The compensatory development of perfectionism and subjugation could then be discussed. Anne could then explore how this case formulation has been consistent with patterns and relationships in her life. Anne could also be supported in increasing her awareness of current behaviours in her life that appear consistent with her case formulation, such as internalising her emotions and not seeking support from her husband, colleagues or friends. The advantages and disadvantages of the short and long term consequences of her belief could then be explored. If Anne decides to actively change her core schema, she could do so by completing any of the schema change ideas, depending on the areas she believed were of most importance to her. For example, if Anne believed that her parenting style was important, she may elect to focus on exploring her emotions regarding past events with her parents that she considered to typify her experience of receiving low parental bonding that contributed to the development of perfectionism. Anne could be taught to validate her emotions through the use of imagery, role plays, letter-writing etc, in which she expresses her emotion regarding her parents influence on the development of her core schema and perfectionism beliefs. Anne could use memory re-scripting and cognitive-restructuring techniques whilst engaging in these techniques to develop more appropriate alternative beliefs during a heightened emotional state (e.g., Wild et al., 2008; Foa, Keane, Friedman, & Cohen, 2009). Anne could also use the behavioural experiment technique to practice behaviour that is consistent with her new belief. An example of such a behavioural experiment is depicted in Table 26.

Table 26

*A behavioural experiment for challenging core schemas associated with perfectionism*

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**Unhelpful target schema:** “If I am not perfect, people will not need me and I’ll end up alone”

**Helpful modified schema:** “My past experiences have taught me that I need to be perfect to avoid rejection, however, this is not accurate and people will not leave me if I make a mistake”.

**Prediction:** My husband will withdraw and love me less if I express my emotions and ask for help

**Experiments**

- 1) Express difficulties about coping with workload and impact on her mood to husband
  - 2) Ask husband for assistance with home duties
- 

By targeting the aetiological factors that are of importance to Anne, it is anticipated that her awareness of how her past experiences may have contributed to her schemas and perfectionism will assist her in validating and normalising her reactions. It is also hoped that this process will allow her to not criticise herself for the development of her beliefs and facilitate her motivation to change these schemas. Changing these schemas through cognitive restructuring and behavioural experiments will hopefully allow Anne to challenge the extent to which she agrees with the schema and develops an alternative more helpful schema that is then reinforced through a new set of maintenance mechanisms.

As mentioned previously, the therapeutic relationship provides a valuable opportunity to facilitate schema change. With regard to Anne, it would be important to validate her emotions as her emotions were invalidated in her childhood. Furthermore, if Anne attempts to complete psychological interventions perfectly, this could be noted and explored. Similarly, if Anne reduces her perfectionist behaviour in session or reports that she has done so outside of the session this could be noted, reinforced and discussed in terms of the advantages over her previous perfectionist approach.

In summary, a proposed tiered treatment for perfectionism was outlined in Table 24 that included targeting both maintenance mechanisms and aetiological factors based on previous perfectionism treatment, suggestions in the literature and results of the present research. It is of course noted that in many treatment settings it is not possible due to session and funding limitations to explore aetiological issues and therefore the aforementioned treatment proposal would need to be modified accordingly. However, where possible it appears that longer psychological therapy is necessary to work effectively with core schemas associated with

perfectionism. It is important for further research to examine the efficacy of interventions that included maintenance and aetiological factors, as the efficacy of targeting aetiological factors of perfectionism has not yet been investigated. This could be achieved using a randomised control trial in a clinical sample by firstly examining the efficacy of CBT for perfectionism. For any participants that did not gain improvement using this approach, the efficacy of participating in the second level of aetiological intervention could then be trialed by randomly allocating half of these participants to the second intervention that focused on targeting aetiological factors outlined in Table 24. A wait-list control group would also be required to form a comparison for the two interventions.

Further randomised controlled trials are also required to examine the efficacy of transdiagnostic CBT in disorder-specific populations. One of the underlying assumptions of transdiagnostic CBT is that this intervention alone will result in a reduction in symptoms and disorders (e.g., Egan et al., in press). Therefore, when perfectionist clients are experiencing difficulties such as obsessive-compulsive disorder, transdiagnostic CBT would not provide disorder-specific exposure-response prevention (ERP) strategies. Further research using randomised control trials is therefore required to examine the efficacy of using transdiagnostic CBT alone compared with disorder-specific intervention techniques plus transdiagnostic CBT in a variety of disorder-specific populations. This could be achieved by examining OCD participants who have high levels of perfectionism. Three intervention groups would be compared to a wait-list control group. The first intervention would provide transdiagnostic CBT. The second intervention group would provide ERP strategies plus transdiagnostic CBT. The third intervention group could provide ERP strategies, transdiagnostic CBT and the intervention to target aetiological factors of perfectionism as outlined in Table 24.

#### **4.3.1 Interventions to Target Perfectionism in Children and Adolescents**

A further clinical implication from the findings in the present research is that preventative interventions could be developed. Wilksch et al. (2008) reported that an eight week perfectionism program designed to reduce eating disorder risk in an adolescent sample was effective in reducing perfectionism, as measured by the CM and PS subscales of the FMPS (Frost et al., 1990), but not with reducing concerns over weight and body shape. Given the findings of the present study, it would be interesting to design interventions to target aetiological factors of perfectionism and examine the efficacy of these interventions in the prevention of perfectionism and associated psychological disorders and issues. Therapists working with children who identify perfectionist issues, could utilise family therapy to explore issues of parental bonding and parental expectations. More specifically, parenting that contributes to the development of schemas relating to self-worth that are contingent on

perfectionist behaviours could be explored, and alternate parenting strategies could be discussed. For example, longitudinal research could examine whether providing perfectionism treatment in childhood could result in positive outcomes during childhood, later adolescence and adulthood. One suggestion for doing this is to compare perfectionism and psychological distress at various ages after receiving a range of interventions in early childhood. These interventions could include a control group; a group that receives a modified version of transdiagnostic CBT for children; and a group that receives an intervention that focuses on transdiagnostic CBT as well as family therapy with a specific focus on modifying parenting styles to ensure that parental care is not contingent on perfectionist behaviour in the child, as this may form unhealthy core schemas.

Similarly, preventative interventions could be provided in a school environment that promotes developing realistic and healthy academic standards and challenging the association between schemas and perfectionist behaviours. Longitudinal research that examines levels of perfectionism and psychological distress could be used to assess the efficacy of such an intervention at various developmental levels of childhood through to adulthood. The treatment of perfectionism in children in a clinical setting as well as the use of preventative programs is an important area that future research could be directed towards.

#### **4.4 Unique Contributions of the Research**

This research program made several contributions to the perfectionism literature. This was the first study to draw together salient aetiological factors in the one model and simultaneously test all aspects of an aetiological model of perfectionism in a clinical sample. This was an important aspect of the research as it enhanced the knowledge of the construct by identifying salient aetiological factors, and examining the relationships between these variables. The relationships between aetiological factors had not been examined before. Moreover, there had been no published studies that simultaneously examined all aspects of any general models of perfectionism. Furthermore, the mediating role of schemas in the development of perfectionism had not been examined before and this enhanced knowledge of there being different cognitive pathways to perfectionism based on parenting factors. Finally, the qualitative study was the first to examine aetiological factors of perfectionism in depth and provided rich clinical detail that enhanced the clinical utility of the model.

The development of an empirically tested aetiological model of perfectionism, which was found to be consistent with case studies, has important clinical implications for psychological assessment, case formulations and treatment. If future research can determine the efficacy of developing treatments that target aetiological factors, this could lead to better outcomes for

people with complex case histories who have been unresponsive to initial treatments that have targeted maintaining mechanisms of perfectionism. Therefore the aetiological model of perfectionism can be viewed as complementary to existing models of maintaining mechanisms of the construct.

#### **4.5 General Limitations of the Research**

Specific limitations of each study have been discussed throughout this research as relevant. There are also some general limitations that are important to take into account when considering the implications of the research. First, in relation to the methodological design of the study it is important to discuss the limitations of using a retrospective design (Neumeister, 2004b). The data from the questionnaires in Study One all required participants to report on their perceptions of past events. No data was obtained from parents of the participants to corroborate the data obtained from questions pertaining to parenting on the PBI (Parker, 1978) or the YSQ-SF (1998). If data was included from the parents, different patterns regarding the aetiology of perfectionism may have emerged. For example, it could be the case that having a perfectionist child influences the style of parenting that is provided. This alternative aetiological pathway cannot be ruled out in the present research, as they were not directly tested. Despite this limitation, it is noted that the clinical implications for perfectionism remain unchanged as in psychological therapy it is the patient's perceptions, emotions, cognitions and behaviours that are of importance and the targets for intervention, as opposed to verified facts in their history.

Further limitations regarding the methodological design also include the use of structural equation modeling. The statistical advantages of using SEM techniques compared to correlational designs were discussed earlier in this research (see section 1.7.5). However, whilst SEM allowed the direction of the relationship between aetiological factors in this research to be identified, SEM does not allow conclusions regarding causation to be made. Therefore, it is possible that the relationships between the variables in the model depicted in the present study may be bidirectional, despite being identified to be aetiological factors to perfectionism in previous research. Thus it is possible that high levels of perfectionism may lead to the development of Disconnection and Rejection Core Schemas, which in turn leads to high levels of Neuroticism and a parenting style characterised by high expectations and criticisms and Affectionless Control. The experimental design is the only methodological design that allows for causal conclusions to be provided, and therefore further prospective and longitudinal designs are required in examining this construct. Whilst a longitudinal or experimental design was not an option for both practical and ethical reasons, the use of SEM in this study does not take into account that there could be competing aetiological models that



could also inform the development of perfectionism. For example, as stated earlier, DiBartolo et al. (2008) used mediational analyses and inferred that beliefs pertaining to contingent self-worth mediated the relationship between perfectionism and psychological distress. Therefore, further research is required to directly compare alternate aetiological models of perfectionism to the model proposed in the current research. As mentioned previously, a measure of psychological distress needs to be incorporated into further studies to facilitate these comparisons.

Additional limitations of the study concern the participants in the sample. The major limitation of not having information regarding the psychological diagnoses of each participant has already been discussed. The second limitation is the possibility of a self-selection bias. The response rate in Study One was 38.9% and thus may not be representative of the entire sample the clinical population was taken from. That is, the recruitment of participants was not random and it is possible that people with higher levels of perfectionism were more likely to agree to participate in both studies. A third limitation in relation to the clinical sample is that participants were recruited at different stages of their treatment. Therefore, the stage at which participants were tested may have varied from during the assessment stage through to being close to the completion of therapy. Therefore, it is entirely possible that levels of perfectionism may have changed for the participants over the course of their treatment and this could have impacted the results of the study. However, this limitation also may not impact the clinical implications of the research as the issue of perfectionism may be identified as a target for intervention at any point of therapy and therefore it may have been useful to test participants at different stages of their psychological treatment. Furthermore, several studies have identified that perfectionism remains elevated post standard CBT treatment (e.g., Bastiani et al., 1995; Lilenfeld et al., 2000), hence it can not be assumed that perfectionism would have reduced throughout standard psychological therapy.

A major limitation of the model of perfectionism proposed and tested in the current research is that the model only accounted for aetiological factors and not maintenance mechanisms of the construct. Ideally, a model of perfectionism would incorporate both aetiological and maintenance factors. It was decided at the outset of this research that it was outside the scope of this project to be able to test maintenance mechanisms in addition to aetiological factors. Although it would have been possible to identify questionnaires that could measure each of the maintenance mechanisms identified in previous models, incorporating several additional questionnaires into the existing lengthy questionnaire battery would have markedly decreased the likelihood of obtaining enough participants to obtain adequate power. For example, adding additional variables to the existing SEM model would have required several hundred additional participants. As there had already been substantial progress made by authors such

as Shafran et al. (2002; 2010) on models of maintaining mechanisms of perfectionism, it was decided that examining the neglected area of aetiological models might be more beneficial to understanding the construct. Therefore, the aetiological model of perfectionism was intended to be viewed as complementary to the existing research on maintaining mechanisms of perfectionism.

A further limitation of this research was the examination of only a certain domain of schemas. The choice of the YSQ-SF (Young, 1998) as the measure of core schemas was based on previous research that examined mediational relationships between parental bonding and a variety of measures of psychological distress. However, as previous research had not examined the mediating relationship of schemas in perfectionism, the researcher based the choice of the schema domain on her reasoning based on well-established cognitive models (e.g., J. Beck, 1995). It is entirely possible that other schema domains are of importance in the development of perfectionism that were not tested in the present research. The increased number of participants that would have been required to provide sufficient power to perform such an analysis prohibited the examination of additional schema domains in the present SEM design. Therefore further research is required to examine aetiological models of perfectionism that include a range of schemas.

A final limitation of this research is that cultural ethnicity and gender was not examined. It may be that different developmental pathways to perfectionism may vary across cultural groups (Neumeister, 2004b). Research has identified cultural differences in the dominant parenting styles. Authoritative parenting styles have been identified to be dominant in middle-class Caucasian families, whereas authoritarian parenting styles are reported to be more common in Asian cultures (e.g., Fuglini, 1997; Greenburger & Chen, 1996). As Neumeister identified, different styles of parenting may be adaptive for children depending on differences in context (Brody & Flor, 1998; Huntsinger, Jose, & Larson, 1998). Similarly, gender differences were not examined in this study and therefore it is unknown whether there are different aetiological pathways to perfectionism based on the genders of both the child and parent. There has been some previous research that has noted gender differences in perfectionism and parenting (e.g., Vieth & Trull, 1999). Therefore, examining gender and cultural differences in aetiological models is worthy of further research.

#### **4.6 Directions for Future Research**

Throughout this thesis there have been many suggestions made for areas of future research in the relevant areas of discussion. Some of the main suggestions have included simultaneously testing models of aetiological and maintaining mechanisms of perfectionism, examining a

variety of core schemas from different measures, incorporating measures of psychological distress into the aetiological model and designing interventions that incorporate targeting aetiological factors of perfectionism. In addition, there are also several general areas of future research that would provide a valuable contribution to the construct of perfectionism. When considering directions for future research, suggestions regarding the conceptualisation and the treatment of perfectionism will be considered separately.

#### **4.6.1 Future Research Regarding the Conceptualisation of Perfectionism**

The overall aim of this research was to enhance the understanding of the construct of perfectionism, with a particular focus on improving the existing knowledge about the aetiological factors of the construct. To achieve this aim, an aetiological model was proposed and tested. The findings provided evidence that parental Affectionless Control, high Parental Expectations and Criticisms, Neuroticism and, Disconnection and Rejection Core Schemas were important factors in the development of Perfectionism. As this research was the first to simultaneously test aetiological factors of perfectionism, further studies are needed to extend these findings. This is important as it will allow an aetiological model of perfectionism to be examined in a range of clinical and non-clinical populations. Examining the aetiological model in a range of populations will enhance generalisability and allow further refinement of a model and ascertain whether these aetiological factors need to be modified accordingly. For example, as stated previously, it is firstly important to replace the FMPS (Frost et al., 1990) subscales of Parental Expectations and Parental Criticism with an independent measure of this construct to ensure that a finding of the direct relationship between Parental Expectations and Parental Criticism and Perfectionism was not simply due to the constructs being from the same measurement scale. It would also be useful for further research to examine the model in disorder-specific populations to confirm that the aetiological model of perfectionism is indeed a transdiagnostic model, or whether the aetiological factors have different relationships with each other based on different psychological disorders. For example, future research could compare the aetiological model in perfectionism in different non-clinical populations, including university students and athletes, which are considered to be characterised by higher than average levels of perfectionism (e.g., Anshel et al., 2009; DiBartolo et al., 2001; Kutlesa & Arthur, 2008).

In addition to testing the aetiological model in different populations, it would be useful for future research to use a number of different perfectionism measures. The HMPS (Hewitt & Flett, 1991) is regarded as a multidimensional measure of perfectionism that also has excellent psychometric properties. The HMPS scale of SOP is considered to be conceptually similar to clinical perfectionism (e.g., Shafran et al., 2003). Further research could examine the aetiological model of perfectionism using self-oriented perfectionism as an alternative to

the measure of perfectionism used in the present research. Additional measures of perfectionism could also be examined including the Clinical Perfectionism Questionnaire (CPQ; Fairburn et al., in preparation, cited in Riley et al., 2007). This research could help to determine whether the aetiological factors of perfectionism used in the present research are the same regardless of the measure of perfectionism used. This would provide valuable knowledge regarding perfectionism, particularly with respect to the measurement of the construct.

Although perfectionism was chosen as the construct of interest in the present research, the literature review revealed that there are several other important dimensions of perfectionism. The importance of positive and negative dimensions in perfectionism has been noted by several authors (e.g., Slade & Owens, 1998). Furthermore, SPP and OOP were also identified as separate and important dimensions of perfectionism that measure different dimensions of perfectionism when compared to SOP (e.g., Hewitt & Flett, 1991a). Therefore an important area of further research is to investigate the salient aetiological factors that contribute to the different dimensions of perfectionism. Research could examine the literature in the relevant construct of perfectionism and test the inter-relationships between these variables. It is likely that there will be different parenting factors and cognitive pathways that are important in the development of each different construct of perfectionism. A greater understanding of these factors would advance knowledge in the construct of the different dimensions of perfectionism, and is important in facilitating the development of targets for intervention in each area.

One possibility for further research that examines the aetiological factors that contribute to the development of positive perfectionism is to investigate the personality domain of conscientiousness. Previous research has reported that conscientiousness is associated with more positive achievement striving aspects of perfectionism (Dunkley et al., 2006; Hill et al., 1997; Rice et al., 2007; Stumpf & Parker, 2000). Therefore further research could examine the style of parenting that combines with conscientiousness to form core schemas that contribute to the development of positive perfectionism. For example, if parents had high expectations but did not make them contingent on provision of parental care and emotional needs then Disconnection and Rejection Core Schemas may not develop. This research is important as it would also inform what parenting styles are protective from developing unhelpful aspects of perfectionism.

It may also be useful for the personality dimension of neuroticism to be examined further in relation to perfectionism. For example, longitudinal research that examines the stage when neuroticism emerges in perfectionists would be of great interest. Further longitudinal research

in this area could identify whether neuroticism is evident from birth, or whether it develops as later in childhood as a result of particular types of parental bonding, by repeatedly administering measures of neuroticism and parental bonding over time. This valuable research could assist in the development of interventions that target variables at appropriate stages. For example, if neuroticism were evident from birth then it would be important for future research to focus on developing interventions that directly target personality variables. If however, particular parenting styles are important in the development of neuroticism then interventions to explore and target the influence of parenting could be examined further in the area of perfectionism.

A further area of interest could be examining the phenomena of when positive perfectionism ceases to become advantageous and starts to develop into negative perfectionism. The participants in the case studies unanimously stated that they initially considered their perfectionism to have several positive effects primarily in relation to enhancing motivation that provided increased opportunities for achievement and recognition. However, the participants also noticed that their perfectionist tendencies became overwhelming and exhausting and described this as a contributing factor to the onset of psychological difficulties including depression and anxiety. Moreover, the participants described difficulties associated with contingent self-worth when they were no longer able to attain their high standards during a depressive episode. These reports were consistent with Shafran and Mansell's (2001) argument that perfectionism often changes from positive to negative perfectionism. Therefore, a further area of research would be to examine the longitudinal course of positive and negative aspects of perfectionism to see when and why the disadvantages start to outweigh the advantages of perfectionism. This research would be useful in enhancing knowledge regarding the developmental course of the aetiological factors. This area may also inform preventative treatments for perfectionism and a range of psychological disorders and issues. Research into the treatment of perfectionism as a preventative strategy has gained recent attention in the literature, such as Wilksch et al.'s (2008) study into the prevention of eating disorders in adolescents through treatment of perfectionism.

#### **4.6.2 Future Research on the Treatment of Perfectionism**

This research has highlighted the importance of understanding aetiological factors associated with perfectionism. Knowledge of these aetiological factors can be taken into account when developing preventative interventions to assist in the management of psychological and health related distress. Future research is needed to examine the efficacy of designing interventions that provide psychological education and parenting skills that promote factors such as parental bonding and parenting styles. To this end, longitudinal research is needed to

evaluate the usefulness of providing early parenting courses in educational or community settings.

On the basis of the findings in this research it has been argued previously that interventions that take aetiological factors as well as maintaining mechanisms into account is an important area of future research. Research needs to perform randomised controlled trials to compare the efficacy of three perfectionism interventions: i) CBT for maintaining mechanisms of perfectionism, such as Shafran et al.'s (2010) program; (ii) an intervention to target aetiological factors of perfectionism; (iii) an intervention that targets both the maintenance mechanisms and aetiological factors of perfectionism, such as the proposed tiered treatment program described in Table 24; and (iv) a wait-list control group. It would be important to examine the post-treatment results of these interventions at several follow-up interventions in the following two years when compared to a wait-list control group. This would help to determine the lasting effects of each style of treatment.

An important area of future research is to examine the efficacy of perfectionism treatments from a wider range of psychological orientations. Promising results have been obtained using CBT to target perfectionism (e.g., Riley et al., 2007). Psychodynamic approaches have also provided rich clinical detail in the treatment of perfectionism (e.g., Greenburg & Bolger, 2001; Sorotzkin, 1995) but there is no empirical evidence that these approaches are effective. There have also been numerous case studies and clinical anecdotes that have described using schema therapy to target schemas associated with perfectionism successfully (Dobson & Dobson, 2009), but again no data to support efficacy. Therefore, it would be of value to examine the empirical effectiveness of perfectionism treatments using schema therapy and psychodynamic approaches that were described in previous case studies (e.g., Greenburg & Bolger, 2001; Sorotzkin, 1995). It would be interesting to also compare the efficacy of treatment using different psychological orientations across short and long term follow up durations.

The construct of perfectionism has recently been referred to as a transdiagnostic construct in the literature in regard to the common aspects that cut across disorders (e.g., Egan et al., in press). A review of the literature highlighted that perfectionism is not only associated with a range of disorders but also seems to be a common issue that appears to be of importance across several psychological orientations, including cognitive-behavioural, schema therapy and psychodynamic orientations. Therefore, an interesting area of future research would be to examine 'transdiagnostic treatment' by investigating ways that each of the therapeutic modalities could be used to complement, rather than compete, with each other. For instance, it would be useful to examine if CBT targets maintaining mechanisms most effectively,

whereas schema therapy and psychodynamic approaches target the aetiological factors more effectively. However, this is a question that requires investigation. Future research that examines optimal combinations of interventions from a variety of psychological orientations would greatly enhance knowledge of the construct of perfectionism as well as informing best practice for treatments at different stages of treatment.

## 4.7 Conclusions

The overall aim of this research was to contribute to the literature on perfectionism by developing and testing an aetiological model of perfectionism. This process involved undertaking a literature review to identify the salient aetiological factors of perfectionism. It was identified that parenting, personality and cognitive factors were previously found to be strongly associated with perfectionism; however, these factors had been studied separately. The most important contribution that this research has made to understanding the construct of perfectionism was to examine the interrelationships between these aetiological factors in the context of a model of perfectionism. Moreover, it was found that high Parental Expectations and Criticisms had a direct relationship with Perfectionism. The Affectionless Control style of parenting had an indirect relationship with Perfectionism that was mediated by Disconnection and Rejection Core Schemas. Furthermore, Neuroticism had both a direct and an indirect relationship, mediated via Disconnection and Rejection Core Schemas, with Perfectionism. The research adds to the existing literature that has proposed models of perfectionism but has never simultaneously tested all aspects of the model to examine how the proposed factors relate to each other. Moreover, the majority of previous literature on models of perfectionism has examined maintaining mechanisms of perfectionism and has not included aetiological factors. Therefore, this model provides an extension of the literature and can be viewed as complementary to existing maintaining models of perfectionism. This research also provides further support for prominent cognitive models that have highlighted the importance between parenting, personality and cognitive factors in the development of specific psychological vulnerabilities and disorders (A. Beck, 1979; J. Beck, 1995; Young, 1994).

Perfectionism is viewed as a transdiagnostic process that occurs across many psychological disorders (Egan et al., in press). An understanding of the aetiological factors of perfectionism is therefore valuable in relation to enhancing knowledge of assessment, measurement and treatment of perfectionism in many psychological issues and disorders. The finding that there are three important aetiological factors in the development of perfectionism is important in relation to the measurement of the construct. While the current consensus is that perfectionism is best viewed as a multidimensional construct, the dimensions measured

include maintaining mechanisms of perfectionism and parental expectations and criticisms, however they do not consider the other aetiological factors. Therefore, future research on the measurement of perfectionism may benefit from including additional measures of parental bonding, neuroticism and core schemas in assessing aetiological factors. The case studies performed in this research highlighted the clinical utility of the aetiological model when conducting initial psychological assessments to enhance the understanding of the developmental process that contributed to perfectionism.

Finally, it was argued that an important area of future research is to develop and test psychological interventions that target both the maintenance mechanisms and aetiological factors of perfectionism to determine if adding a focus on aetiological factors increases efficacy of treatment. Psychological treatment that allows for different factors to be targeted based on the client's needs and stage of treatment using a tiered treatment approach would be of great clinical utility in providing best practice if it was determined through randomised controlled trials that it increased treatment efficacy.

Overall, this research program has provided important contributions to understanding the construct of perfectionism. The findings add to existing knowledge of maintaining mechanisms of perfectionism by extending the models of perfectionism to include aetiological factors. This research provides useful information on the relationships between aetiological factors of perfectionism that can be used to guide the assessment and measurement of the construct. This research may also have useful clinical implications for the future development of psychological interventions that target aetiological factors of perfectionism that could enhance existing treatments that target maintaining mechanisms of perfectionism.

Given the importance of perfectionism in relation to a wide range of psychological disorders and issues, a thorough understanding of how perfectionism develops could improve psychological assessment, case formulation and subsequent treatment for many individuals. The knowledge of aetiological factors is clinically useful at several different stages of psychological therapy, including initial psychological assessment, case formulation, and treatment with a view to effecting long-lasting psychological change.



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## **APPENDICES**

### **Appendix A: Demographic Information**

#### **DEMOGRAPHICS**

**GENDER:** Male/Female

**AGE:** \_\_\_\_\_

**OCCUPATION:** \_\_\_\_\_ Full time/Part time/Currently not working

**EDUCATION** (please specify number of years of education): \_\_\_\_\_

**RELATIONSHIP STATUS:** Single/DeFacto/Married

**DO YOU HAVE ANY CHILDREN? Y/N IF YES, HOW MANY CHILDREN? \_\_**

**HOW MANY SESSIONS HAVE YOU HAD WITH YOUR CURRENT THERAPIST**  
(approximate number): \_\_\_\_\_

**HAVE YOU EVER PARTICIPATED IN ANY PREVIOUS THERAPY? Y/N**  
**IF YES, APPROXIMATELY HOW MANY THERAPY SESSIONS HAVE YOU**  
**ATTENDED PRIOR TO YOUR CURRENT THERAPY** (approximate number): \_\_\_\_\_

## Appendix B: Multidimensional Perfectionism Scale

### MPS

Please circle your response:

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
1. My parents set very high standards for me.	1	2	3	4	5
2. Organisation is very important to me.	1	2	3	4	5
3. As a child, I was punished for doing things less than perfect.	1	2	3	4	5
4. If I do not set the highest standards for myself, I am likely to end up a second-rate person.	1	2	3	4	5
5. My parents never tried to understand my mistakes.	1	2	3	4	5
6. It is important to me that I be thoroughly competent in everything I do.	1	2	3	4	5
7. I am a neat person.	1	2	3	4	5
8. I try to be an organised person.	1	2	3	4	5
9. If I fail at work/school, I am a failure as a person.	1	2	3	4	5
10. I should be upset if I make a mistake.	1	2	3	4	5
11. My parents wanted me to be the best at everything.	1	2	3	4	5
12. I set higher goals than most people.	1	2	3	4	5
13. If someone does a task at work/school better than I, then I feel like I failed the whole task.	1	2	3	4	5
14. If I fail partly, it is as bad as being a complete failure.	1	2	3	4	5
15. Only outstanding performance is good enough in my family.	1	2	3	4	5
16. I am very good at focusing my efforts on attaining a goal.	1	2	3	4	5
17. Even when I do something very carefully, I often feel that it is not quite right.	1	2	3	4	5
18. I hate being less than the best at things.	1	2	3	4	5
19. I have extremely high goals.	1	2	3	4	5
20. My parents have expected excellence from me.	1	2	3	4	5
21. People will probably think less of me if I make a mistake.	1	2	3	4	5
22. I never felt like I could meet my parents' expectations.	1	2	3	4	5

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
23. If I do not do as well as other people, it means I am an inferior human being.	1	2	3	4	5
24. Other people seem to accept lower standards from themselves than I do.	1	2	3	4	5
25. If I do not do as well all the time, people will not respect me.	1	2	3	4	5
26. My parents have always had higher expectations for my future than I have.	1	2	3	4	5
27. I try to be a neat person.	1	2	3	4	5
28. I usually have doubts about the simple everyday things I do.	1	2	3	4	5
29. Neatness is very important to me.	1	2	3	4	5
30. I expect higher performance in my daily tasks than most people.	1	2	3	4	5
31. I am an organised person.	1	2	3	4	5
32. I tend to get behind in my work because I repeat things over and over.	1	2	3	4	5
33. It takes me a long time to do something "right".	1	2	3	4	5
34. The fewer mistakes I make, the more people will like me.	1	2	3	4	5
35. I never felt like I could meet my parents' standards.	1	2	3	4	5

### **Appendix C: Young Schema Questionnaire – Short Form**

Due to copyright laws, the YSQ-SF (YSQ-SF, 1998) is not reproduced here. A copy of the YSQ-SF (Young, 1998) is available at: <http://www.schematherapy.com/id54.htm>.

## Appendix D: Parental Bonding Instrument

### FATHER FORM

*This questionnaire lists various attitudes and behaviours of parents. As you remember your FATHER in your first 16 years would you place a tick in the most appropriate box next to each question.*

	Very like	Moderately like	Moderately unlike	Very unlike
1. Spoke to me in a warm and friendly voice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did not help me as much as I needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Let me do those things I liked doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Seemed emotionally cold to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Appeared to understand my problems and worries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was affectionate to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Liked me to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did not want me to grow up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Tried to control everything I did	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Invaded my privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Enjoyed talking things over with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently smiled at me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tended to baby me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Did not seem to understand what I needed or wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Let me decide things for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Made me feel I wasn't wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Could make me feel better when I was upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Did not talk with me very much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Tried to make me feel dependent of her/him	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Felt I could not look after myself unless she/he was around	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Gave me as much freedom as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Let me go out as often as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was overprotective of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Did not praise me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Let me dress in any way I pleased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**MOTHER FORM**

*This questionnaire lists various attitudes and behaviours of parents. As you remember your MOTHER in your first 16 years would you place a tick in the most appropriate box next to each question.*

	Very like	Moderately like	Moderately unlike	Very unlike
1. Spoke to me in a warm and friendly voice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did not help me as much as I needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Let me do those things I liked doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Seemed emotionally cold to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Appeared to understand my problems and worries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was affectionate to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Liked me to make my own decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did not want me to grow up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Tried to control everything I did	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Invaded my privacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Enjoyed talking things over with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently smiled at me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tended to baby me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Did not seem to understand what I needed or wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Let me decide things for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Made me feel I wasn't wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Could make me feel better when I was upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Did not talk with me very much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Tried to make me feel dependent on her/him	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Felt I could not look after myself unless she/he was around	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Gave me as much freedom as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Let me go out as often as I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Was overprotective of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Did not praise me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Let me dress in any way I pleased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix E: Neuroticism Extraversion Openness-Five Factor Inventory – Neuroticism

### Subscale Items:

#### NEO Five-Factor Inventory

**Instructions:** Read each statement carefully. For each statement circle the response that best represents your opinion. Fill in only one response for each statement.

Fill in ☐ SD if you strongly disagree or the statement is definitely false

Fill in ☐ D if you disagree or the statement is mostly false

Fill in ☐ N if you are neutral on the statement, you cannot decide, or the statement is about equally true or false

Fill in ☐ A if you agree or the statement is mostly true

Fill in ☐ SA if you strongly agree or the statement is definitely true

**For example if you strongly disagree or believe that a statement is definitely false, you would fill in SD for that statement:**

☒ SD ☐ D ☐ N ☐ A ☐ SA

I am not a worrier	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I often feel inferior to others	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
When I'm under a great deal of stress, sometimes I feel like I'm going to pieces	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I rarely feel lonely or blue	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I often feel tense and jittery	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
Sometimes I feel completely worthless	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I rarely feel fearful or anxious	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I often get angry at the way people treat me	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
Too often, when things go wrong, I get discouraged and feel like giving up	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I am seldom sad or depressed	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
I often feel helpless and want someone else to solve my problems	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA
At times I have been so ashamed I just wanted to hide	<input type="radio"/> SD <input type="radio"/> D <input type="radio"/> N <input type="radio"/> A <input type="radio"/> SA

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## **Appendix F: Study One – Participant Information & Consent Form**

### **A Study About Personal Standards**

My name is Gayle Maloney and this research is part of my PhD, which I am completing through Curtin University School of Psychology. The aim of the research is to better understand the development of high standards that people set for themselves. It is hoped that understanding more about this will help to clarify how the development of overly high standards can be associated with depression and anxiety. This understanding, in turn, will help in developing better psychological treatments. We are inviting anyone to participate who is currently receiving psychological or psychiatric treatment.

#### **What will the project involve?**

If you participate, you will complete a set of questionnaires, which will take approximately 30 minutes. You may complete the questionnaire in the waiting room of this clinic/organization or complete this at home and return it on your following appointment. Upon completion of the questionnaires, you will be given a \$2 “scratch & win lottery ticket” as a token of appreciation for your time and effort. Please note all questionnaires need to be returned to the clinic/organization by the 30<sup>th</sup> April 2007 to receive this lottery ticket.

#### **What happens to the information collected?**

The questionnaires do not require you to provide your name and therefore the anonymous nature of the questionnaire will ensure confidentiality. The demographic information completed will be stored separately from your questionnaires and both lots of data will be kept in a locked cabinet. No individual results will be utilized from this study in any research that may be published. You can withdraw from the project at any time without any negative consequences. Your personal therapist will not have access to your results and will not be aware whether or not you completed the questionnaires. The questionnaires will be destroyed five years after the research has been concluded. Your treatment at this clinic/organization will not be effected in any way if you choose to withdraw from the project. The Curtin University of Technology Human Research Ethics Committee as approved this project.

**If you would like more information....**

If you have questions about any aspect of this research project, please contact Gayle Maloney (Chief Researcher) on 0413570222 or my supervisor, Sarah Egan on 9266 2367.

Alternatively, if you would prefer to contact somebody independent of this study, please phone the Ethics Committee Secretary, Linda Teasdale, on 9266 2784.

Thank you for your time

Gayle Maloney  
Chief Researcher

**Consent Form**

1. I have read the attached Participant Information Sheet. I fully understand the aims and procedures.
2. I understand that my participation in this program is voluntary and that I can withdraw from the project at any time without negative consequences, i.e. withdrawal will not effect my treatment in any way.
3. I understand that all information obtained is in the strictest confidence
4. On the basis of the above information, I give my permission to participate in this project.

Participants Signature:\_\_\_\_\_

Date:\_\_\_\_\_

Date:

*The rating scale is as follows:*

- 0 Did not apply to me at all  
1 Applied to me to some degree, or some of the time  
2 Applied to me to a considerable degree, or a good part of time  
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

## Appendix H: Mini-Psychiatric Neuropsychological Interview Screen

<b>PATIENT NAME :</b> _____	<b>DATE OF BIRTH:</b> _____
<b>DATE OF INTERVIEW:</b> _____	<i>If YES, go to the corresponding M.I.N.I. module</i>

➤ Have you been <b>consistently</b> depressed or down, <b>most of the day, nearly every day</b> , for the past two weeks ?	NO	YES	→ <b>A</b>
➤ In the past two weeks, have you been much less interested in most things or much less able to enjoy the things you used to enjoy <b>most of the time</b> ?	NO	YES	→ <b>A</b>
➤ Have you felt sad, low or depressed <b>most of the time</b> for the last two years ?	NO	YES	→ <b>B</b>
➤ In the past month did you think that you would be better off dead or wish you were dead ?	NO	YES	→ <b>C</b>
➤ Have you <b>ever</b> had a period of time when you were feeling 'up' or 'high' or so full of energy or full of yourself that you got into trouble, or that other people thought you were not your usual self ? (Do not consider times when you were intoxicated on drugs or alcohol.)	NO	YES	→ <b>D</b>
➤ Have you <b>ever</b> been persistently irritable, for several days, so that you had arguments or verbal or physical fights, or shouted at people outside your family ? Have you or others noticed that you have been more irritable or over reacted, compared to other people, even in situations that you felt were justified ?	NO	YES	→ <b>D</b>
➤ Have you, on more than one occasion, had spells or attacks when you suddenly felt anxious, frightened, uncomfortable or uneasy, even in situations where most people would not feel that way ? Did the spells peak within 10 minutes ? CODE YES ONLY IF THE SPELLS PEAK WITHIN 10 MINUTES.	NO	YES	→ <b>E</b>
➤ Do you feel anxious or uneasy in places or situations where you might have a panic attack or panic-like symptoms, or where help might not be available or escape might be difficult : like being in a crowd, standing in a line (queue), when you are away from home or alone at home, or when crossing a bridge, traveling in a bus, train or car ?	NO	YES	→ <b>F</b>
➤ In the past <b>month</b> were you fearful or embarrassed being watched, being the focus of attention, or fearful of being humiliated ? This includes things like speaking in public, eating in public or with others, writing while someone watches, or being in social situations.	NO	YES	→ <b>G</b>
➤ In the past <b>month</b> have you been bothered by recurrent thoughts, impulses, or images that were unwanted, distasteful, inappropriate, intrusive, or distressing ? (e.g., the idea that you were dirty, contaminated <b>or</b> had germs, or fear of contaminating others, <b>or</b> fear of harming someone even though you didn't want to, <b>or</b> fearing you would act on some impulse, <b>or</b> fear or superstitions that you would be responsible for things going wrong, <b>or</b> obsessions with sexual thoughts, images or impulses, <b>or</b> hoarding, collecting, <b>or</b> religious obsessions.)	NO	YES	→ <b>H</b>

➤ Turn Page

IF YES, GO TO THE CORRESPONDING M.I.N.I. MODULE

➤ In the past <b>month</b> , did you do something repeatedly without being able to resist doing it, like washing or cleaning excessively, counting or checking things over and over, or repeating, collecting, or arranging things, or other superstitious rituals ?	NO	YES	→ <b>H</b>																																																
➤ Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else ? EXAMPLES OF TRAUMATIC EVENTS INCLUDE SERIOUS ACCIDENTS, SEXUAL OR PHYSICAL ASSAULT, A TERRORIST ATTACK, BEING HELD HOSTAGE, KIDNAPPING, FIRE, DISCOVERING A BODY, SUDDEN DEATH OF SOMEONE CLOSE TO YOU, WAR, OR NATURAL DISASTER.	NO	YES	→ <b>I</b>																																																
➤ Did you respond to the trauma with intense fear, helplessness, or horror ?	NO	YES	→ <b>I</b>																																																
➤ During the past month, have you re-experienced the event in a distressing way (such as, dreams, intense recollections, flashbacks or physical reactions) ?	NO	YES	→ <b>I</b>																																																
➤ In the past <b>12 months</b> , have you had 3 or more alcoholic drinks within a 3 hour period on 3 or more occasions ?	NO	YES	→ <b>J</b>																																																
➤ Now I am going to show you / <b>READ THE LIST BELOW</b> of street drugs or medicines. In the past <b>12 months</b> , did you take any of these drugs more than once, to get high, to feel better, or to change your mood ?	NO	YES	→ <b>K</b>																																																
<table border="0"> <tr> <td>Amphetamines</td> <td>Speed</td> <td>Crystal Meth</td> <td>Dexedrine</td> <td>Ritalin, Diet Pills</td> </tr> <tr> <td>Cocaine</td> <td>Crack</td> <td>Freebase</td> <td></td> <td></td> </tr> <tr> <td>Heroin</td> <td>Morphine, Methadone</td> <td>Opium</td> <td>Demerol</td> <td>Codeine, Percodan, OxyContin</td> </tr> <tr> <td>LSD</td> <td>Mescaline</td> <td>PCP</td> <td>MDMA</td> <td>Ecstasy</td> </tr> <tr> <td>Inhalants</td> <td>Glue</td> <td>Ether</td> <td>GHB</td> <td>Steroids</td> </tr> <tr> <td>THC, Marijuana</td> <td>Cannabis, Hashish</td> <td>Grass</td> <td></td> <td>Barbiturates, Valium, Xanax, Ativan</td> </tr> </table>				Amphetamines	Speed	Crystal Meth	Dexedrine	Ritalin, Diet Pills	Cocaine	Crack	Freebase			Heroin	Morphine, Methadone	Opium	Demerol	Codeine, Percodan, OxyContin	LSD	Mescaline	PCP	MDMA	Ecstasy	Inhalants	Glue	Ether	GHB	Steroids	THC, Marijuana	Cannabis, Hashish	Grass		Barbiturates, Valium, Xanax, Ativan																		
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➤ How tall are you ?	_ _ _  inches																																																		
➤ What was your lowest weight in the past 3 months ?	_ _ _  lbs																																																		
IS PATIENT'S WEIGHT LOWER THAN THE THRESHOLD CORRESPONDING TO HIS / HER HEIGHT ? SEE TABLE BELOW	NO	YES	→ <b>M</b>																																																
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➤ In the past <b>three months</b> , did you have eating binges or times when you ate a very large amount of food within a <b>2-hour</b> period ?	NO	YES	→ <b>N</b>																																																
➤ In the last <b>3 months</b> , did you have eating binges as often as twice a week ?	NO	YES	→ <b>N</b>																																																
➤ Have you worried <b>excessively</b> or been anxious about several things over the past 6 months ?	NO	YES	→ <b>O</b>																																																

## **Appendix I: Study Two – Participant Information and Consent Form**

### **A study about personal standards**

Curtin University School of Psychology is conducting a research project aimed at understanding more about the development of high standards that people set for themselves. It is hoped that understanding more about this can help to inform how the development of high standards may be associated with depression and anxiety, which may then be used to develop corresponding psychological treatments. We are inviting anyone to participate who is currently receiving psychological or psychiatric treatment.

### **What will the project involve?**

If you participate, you will complete a short-interview asking you information about how you think your personal standards developed. This will take approximately 30 minutes to complete. You will also be asked to complete some questionnaires aimed at enhancing the knowledge about the development of personal standards. This will take approximately 30 minutes to complete and asks you how strongly you agree with a number of different statements. You may complete the questionnaire in the waiting room of this clinic/organization.

### **What happens to the information collected?**

Individual questionnaires will be stored separately from identifying information in a locked cabinet. The researcher will keep all questionnaires and tapes completely confidential. The interviews will be tape recorded and transcribed (written onto paper) and then the tapes will be erased five years after the research has been concluded. The interviews will be recorded as it is not possible for the researcher to recall all of the information discussed during the interview. However, no identifying data will be recorded on the tape (i.e. no names or contact details). The tapes and transcripts will be stored in separate locked cabinets in the researcher's home and business office respectively. Extracts of the interviews may be used in the research project but you would not be identified in any way. A research assistant may be used to transcribe or code the interviews, however they will sign a confidentiality contract and they will not have access to any identifying information. You can withdraw from the project at any time without any negative consequences. Your treatment at this clinic/organization will not be effected if you choose to withdraw from the project. The Curtin University of Technology Human Research Ethics Committee has approved this project.

### **If you would like more information....**

If you have questions about any aspect of this research project, please contact Gayle Maloney (Chief Researcher) on 0413570222 or my supervisor, Sarah Egan on 9266 2367.

Alternatively, if you would prefer to contact somebody independent of this study, please phone the Ethics Committee Secretary, Linda Teasdale, on 9266 2784.

Thank you for your time

Gayle Maloney  
Chief Researcher

### **Consent Form**

1. I have read the attached Participant Information Sheet. I fully understand the aims and procedures.
2. I understand that my participation in this program is voluntary and that I can withdraw from the project at any time without negative consequences, i.e. withdrawal will not effect my treatment in any way.
3. I understand that all information obtained is in the strictest confidence
4. I understand that excerpts from my interviews may be used in the final report of this research any may also be published in articles associated with this research, however I will not be identified in any way.
5. On the basis of the above information, I give my permission to participate in this project.

Participants Name:\_\_\_\_\_

Participants Signature:\_\_\_\_\_ Date:\_\_\_\_\_

Witness Name:\_\_\_\_\_

Witness Signature:\_\_\_\_\_ Date:\_\_\_\_\_

## Appendix J: Ethics Approval

